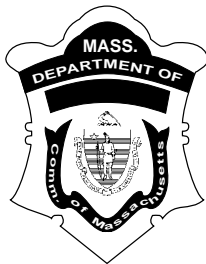


Massachusetts Burn Injury Reporting System

2000 Annual Report



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Massachusetts Burn Injury Reporting System

2000 Annual Report

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2000 Executive Summary

In 2000, the sixteenth full year of the Massachusetts Burn Injury Reporting System (M-BIRS), 50 acute care hospitals and other health care facilities reported 467 victims of burns. M-BIRS was established in the Department of Public Safety in 1984 as a tool to help fire service and law enforcement personnel identify arsonists that may have been burned while setting fires. M-BIRS, along with the Office of the State Fire Marshal, was carried over to the newly created Department of Fire Services in 1996. It remains a joint program of the Department of Fire Services and the Massachusetts Department of Public Health. The “Burn Registry” also provides valuable data on the nature of the burn problem in the Commonwealth.

Statutory Authority for M-BIRS in MGL 112, Section 12A

According to Massachusetts General Law (MGL) Chapter 112, Section 12A, the treatment of all burn injuries extending over 5% or more of a person’s body surface area must be reported immediately to the State Fire Marshal.

All burn reports received by the State Fire Marshal’s Office are reviewed for possible suspicious circumstances. Gasoline burns, burns on the hands and arms or other unusual scenarios are referred for further investigation.

M-BIRS has Two Main Purposes ³/₄ Identifying Arsonists and Burn Prevention

Data collected by the Massachusetts Burn Injury Reporting System is used in several ways. Investigators use the data to determine if an arsonist was treated for a burn that resulted from an attempt to illegally burn a building or vehicle. If these burns are not reported promptly, arsonists may continue to light fires that threaten life and property. Our data has also been used to identify problems that need to be addressed by public education or regulation and to develop appropriate strategies to deal with these problems. We need to know what type of activity injures whom, if the injuries are seasonal and how old the victims are to develop and implement effective prevention programs. We appreciate the efforts of the many dedicated doctors, nurses and clerical personnel who report the burn injuries promptly and completely. They make the program work.

Scalds Caused 40% of Reported Burn Injuries; Pre-Schoolers at Greatest Risk

Scalds have been the leading cause of burn injuries for the past sixteen years. Spilled hot beverages caused more scalds and more burn injuries than any other cause. This restores the trend of the past sixteen years that was only interrupted last year when hot cooking liquids was the leading cause by one percentage point over hot beverages. Hot tap water (22%) and cooking liquid (21%) scalds were the second and third leading causes of scald injuries in 2000. Cooking grease (13%) is also a leading cause of scald burns. These injuries, combined with 16% of flame burns occurring in the kitchen, makes the kitchen the place where burn injuries are most likely to take place. Since we must cook every day, we must learn to do so safely.

Young children were the most frequent victims of scald burns. According to the 2000 U.S. Census, children under five years old comprised 6% of the Massachusetts population. However, 77, or 41%, of the 189 scald victims were under five years old. Children under five years of age

were seven times more likely to be scalded. Fifty-two, or 28%, were infants one-year old or younger. Hot beverages posed the greatest risk to young children this year, but hot tap water and hot cooking liquids were also the causes of many scalds to pre-schoolers. Scalds were the leading cause of burn injuries to all age groups except those in the 10 to 14 age bracket where flame burns were the leading cause.

The improper opening of hot car radiators caused only three percent (3%) of the 189 scald burns and just 1% of the 467 burn injuries reported in 2000. This is a 50% reduction from the previous two years and the lowest count since the description of car radiator was differentiated from car part back in 1986. Over these past fifteen years, there has been a definite declining trend of scald burns from the improper opening of hot car radiators with a peak total of fifty-one occurring in 1987 to the current low of five in 2000. This may be due to the public education efforts from the 1990's finally bearing results. These efforts by the Department of Fire Services, Massachusetts Department of Public Health and others include the *Summer Auto Safety* flyer.

Keep Hot Liquids, Hot Objects Away from Children

Over one-third of the scald victims were children under five years of age. There are several safety tips that we can follow to decrease this statistic. It is dangerous to drink coffee while holding a baby. Pot handles on the stove must be turned inward and children must be taught not to play near the stove. More training in safe cooking could prevent many of the scalds, contact burns and burns from cooking ignitions incurred by both children and adults.

Hot tap water is also a danger to very young children. It takes only two seconds of exposure to water at 150°F to cause a third degree burn. Hot water heaters should be set to temperatures of 125° F or less. (Massachusetts state law states that the temperature must be set between 110°F and 130°F.) Most dishwashers have coils to boost water temperatures to appropriate levels. Parents should never leave a baby or toddler alone in a bath. Young children like to turn knobs and use levers. They may turn on the hot water when a parent is distracted. This has been an increasing trend over the past ten years with an average growth rate of half a percentage point per year.

Contact burns have also shown an increasing trend of half a percentage point per year for the past ten years. Hot objects such as irons, stoves and barbecue grills burn small children more than any other age group. As children explore their environment, they reach for things and touch things. Any parent will agree that children can move themselves into danger rather quickly. While active supervision is essential, it is best to remove potential dangers from a child's reach whenever possible.

Flame Burns Were the Second Largest Cause of Burn Injuries

Flame burns were the second largest cause of burn injuries in 2000. A flame burn is when the fire is confined to the victim or the victim's clothing. When a wider area burns, the cause of the injury is considered a fire.

Gasoline is the Leading Cause of Flame Burns

Gasoline was the leading contributor to flame burns causing 21% of the injuries in 2000. Of these 16 injuries, 11, or 69%, were to children 16 years old or younger. Ten of these 11 injuries

were to children between the ages of eight and sixteen years old. Children have to be taught that gasoline is a dangerous substance that should be handled with extreme care.

Clothing Ignitions is a Leading Cause of Flame Burns

Another 21% of the flame burns involved clothing ignitions, including injuries sustained while cooking, smoking, using candles, children playing with fire and other sources of clothing ignitions. During the year 2000, clothing ignitions burned only three people over the age of 65. This seems to be a reversal of previous years' figures, in which clothing ignitions were a leading cause of burn injuries to older adults.

Smoking while using home oxygen systems, fires started by candles and clothing ignitions from cooking were significant causes of flame burns to older adults.

Some age groups are at more risk than others for particular types of burn injuries because the activities they engage in are often age-related. For a more detailed look at causes of burn injuries by age group, please look at the section that begins on page 25.

Hospitals reported that 11% of the burn victims were burned while working, down from 17% in 1999, and 20% in 1998. Over four-fifths of the people burned while working were male.

The percentages of the population in each age group were calculated using data from the 2000 Census from the U.S. Census Bureau.

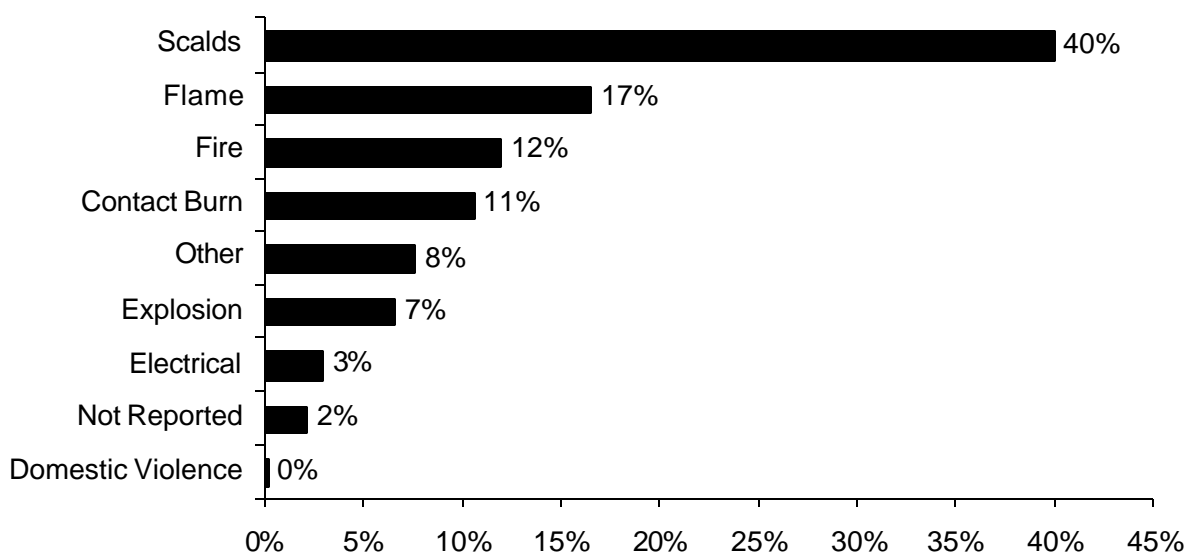
Painful, disfiguring and expensive burn injuries exact a tremendous toll from their victims, their families and society. The statistics in this report illustrate the need for more burn prevention education and indicate the groups to which specific safety messages should be targeted.

State Fire Marshal Stephen D. Coan invites health and medical professionals, classroom and community educators, day care teachers and elder service workers to join with him in making the Commonwealth safer from burn injuries.

Causes of Burn Injuries

In this report, we look at burn injuries in two different ways. In the first section, we look at the type of incident that caused the burn. Was the burn caused by a fire, a flame, a scald or something else? A burn is said to result from a flame when the fire is confined to the victim or the victim's clothing. When a wider area burns, the injury is considered to result from fire.

Categories of Burn Injuries



We also look at more specific causes such as hot beverage scalds or incidents involving gasoline.

Half of All Burn Victims Never Come Near a Flame

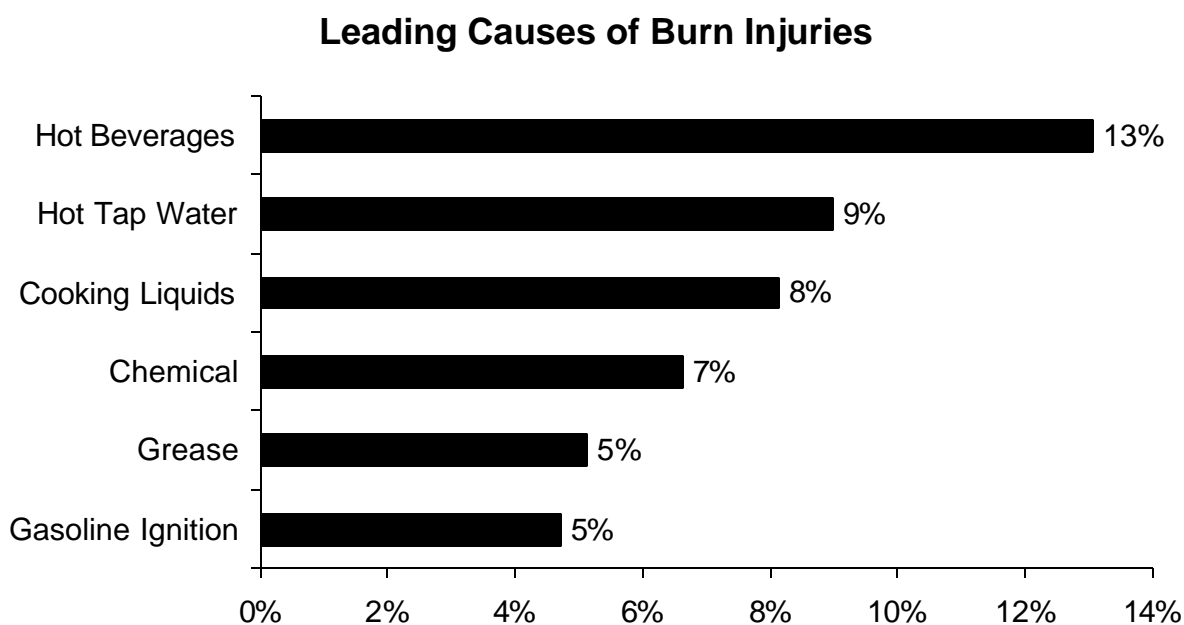
Scalds from hot liquids, cooking grease and steam caused 40% of the 467 burn injuries reported in 2000. Flames from burning clothing, bedding or similar objects caused 17% of the burns. Twelve percent (12%) were caused by fires; 11% were caused by contact with hot objects; and explosions caused 7% of burn injuries. Electrical incidents such as electrocutions, flashburns¹ and explosions caused 3% of the burns. Eight percent (8%) of the reported burns in 2000 had other causes, such as chemical burns or sunburns.

¹ A flashburn is a burn caused by short-term exposure to super-heated air generally from an explosion; there is no direct contact with flame.

Type of Incidents Causing Burn Injuries

Look at Specific Causes and Equipment to Develop Prevention Strategies

To develop effective burn prevention policies and programs, we must first look at the specific items or behaviors that caused the burns. Thirteen percent (13%) of the 467 burn injuries reported in 2000 were scalds from hot beverages. Hot tap water caused 9% of the burn injuries. Eight percent (8%) of the burns were caused by hot cooking liquids. Chemical burns accounted for 7% of the burns reported in 2000. Five percent (5%) of burns were caused by grease scalds. Gasoline ignitions caused another 5% of the reported burn injuries. For more information, please refer to the table *Specific Causes of Burn Injuries* in the Appendix.



Burn Injuries Caused by Scalds

Scalds Caused 40% of All Burns

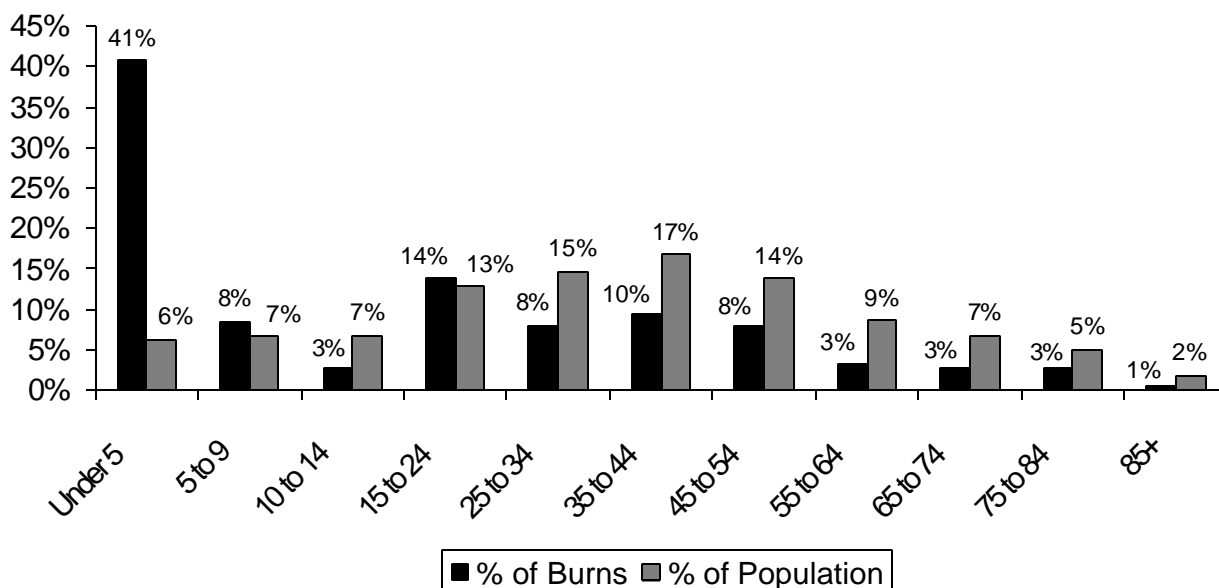
Scalds have been the leading cause of burn injuries every year since the inception of M-BIRS. One hundred eighty-nine (189), or 40%, of the 467 reported burns were hot liquid scalds. Fourteen (14), or 7% of the 189 scalds occurred while the victim was working.

One hundred (100), or 53%, of the 189 scald victims were male and eighty-seven (87), or 47% were female.

Children Under 5 Years Old Were Most at Risk for Scald Burns

Young children were the most frequent victims of scald burns. According to the 2000 U.S. Census, children under the age of five years comprised 6% of the Massachusetts population. However that same age group accounted for almost half, some 41%, of all scald burns in 2000. Fifty-two, or 28%, were infants one year old or younger. Children aged five to nine accounted for 8%, while children aged ten to fourteen accounted for 7% of these injuries.

Scalds by Age Group

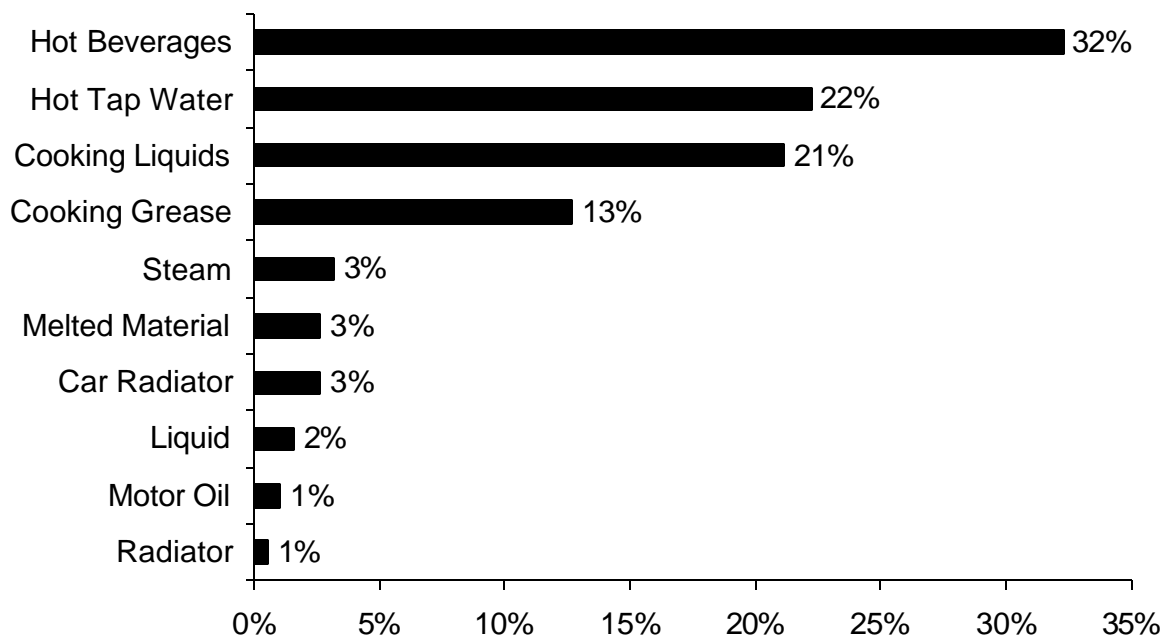


Many adults also suffered burns from scalds. Fourteen percent (14%), were between 15 and 24 years old; 8% were between 25 and 34; 10% were between 35 and 44 years of age; 8% were between 45 and 54; 3% were between 55 and 64; another 3% were between 65 and 74; yet another 3% were between 75 and 84 and the last 1% were over 85 years old. When the shaded bar of the graph representing the percent of scald burns is higher than the unshaded bar representing percent of population, higher than expected risk at this type of injury exists.

Hot Beverages Caused 1 of Every 3 Scald Burns

Spilled hot beverages caused more scalds and more burn injuries than any other cause. This restores the trend of the past ten years that was only interrupted last year when hot cooking liquids was the leading cause by one percentage point over hot beverages. Thirty-two percent (32%), of the 189 scald burns were caused by hot beverages. Twenty-two percent (22%) were caused by hot tap water. Hot cooking liquids was a close third, accounting for 21% of all scald burns. Thirteen percent (13%) were caused by hot cooking grease while only 3% were caused by steam. The improper opening of hot car radiators was the cause for some 3% of these injuries. This indicates a decrease of 50% over the number of scald burns caused by the improper opening of car radiators from the past two years. Three (3%) were caused by melted material such as plastic or tar. Two percent (2%) of scald burns were caused by liquids other than those mentioned above. Both motor oil and a home radiator were the culprits in 1% of the scald burn injuries.

Causes of Scalds

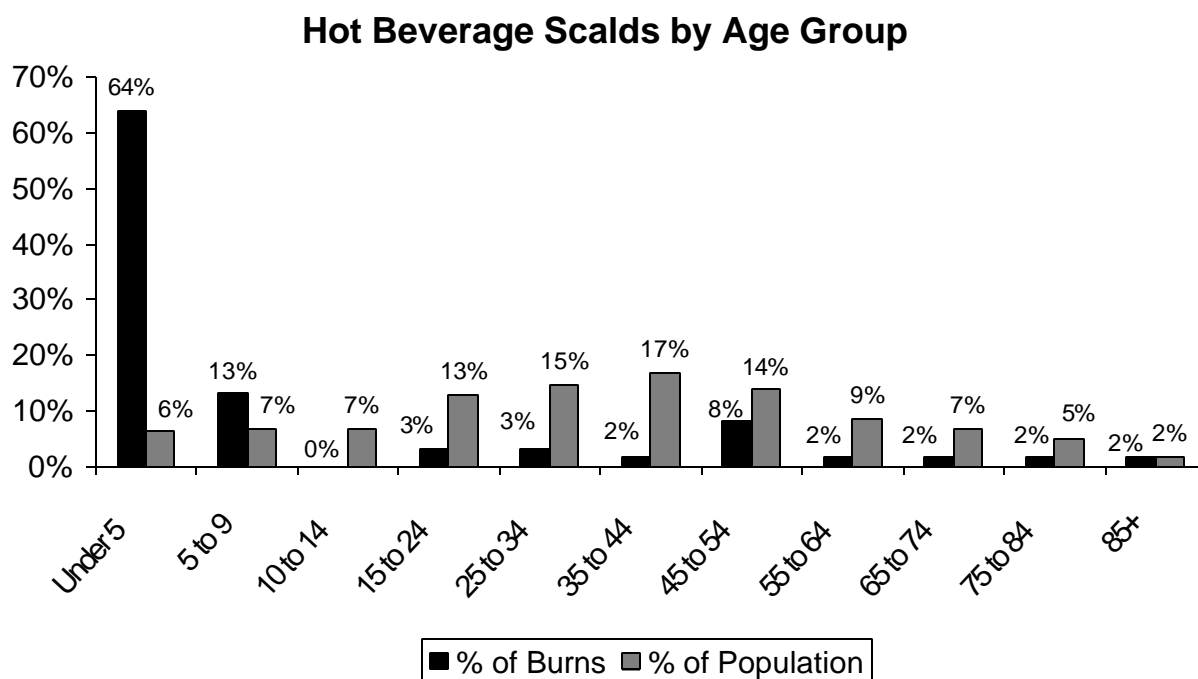


Hot Beverages

Hot Beverages Caused 1/3 of All Scalds

Sixty-one (61), or 32%, of the 189 scald burns were caused by hot beverages. These 61 burns accounted for 13% of the 467 burn injuries reported in 2000. Except for 1999, hot beverages has been the leading cause of scald burns since the inception of M-BIRS in 1984.

Fifty-four percent (54%) of the 61 hot beverage scald victims were male and 46% were female. Hot beverages scalded only one person while she was working.



Over 1/2 of the Hot Beverage Scald Victims Were Under 5

Sixty-four percent (64%) of 61 hot beverage scald victims of known age were less than five years of age. Children under five years old were ten times more likely to be scalded by a hot beverage. Thirty-one (31), or 51%, were one-year old or younger. In 1999, 48% of the victims of hot beverage scalds were less than five years old.

Thirteen percent (13%) of the hot beverage scald victims were between five and nine years old, this age group was two times more likely to be injured; there were no reported hot beverage scalds for the age group between 10 and 14 years old; 3% were between 15 and 24; 3% were between 25 and 34; 2% were between 35 and 44; 8% were between 45 and 54; 2% were between 55 and 64; 2% were between 65 and 74; 2% were between 75 and 84 years of age and the last 2% were over 85 years of age.

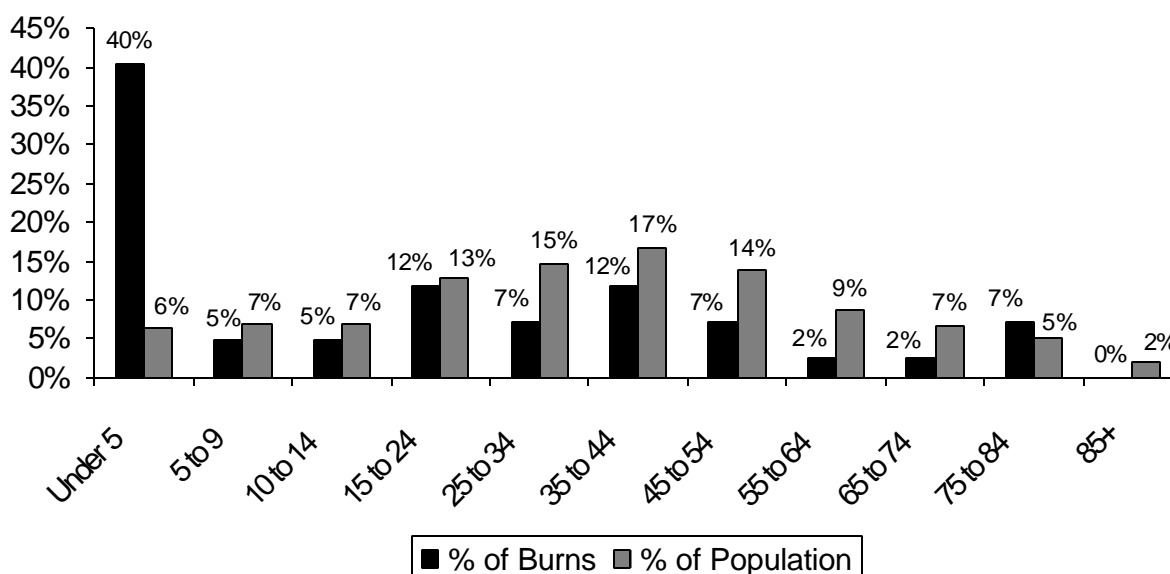
Hot Tap Water

Hot Tap Water Caused 1/5 of All Scalds

Excessively hot tap water caused 42, or 22%, of the 189 scald burns and 9% of the 467 total burn injuries reported to M-BIRS in 2000. Hot water heaters should be set to temperatures of 125° Fahrenheit or less. Massachusetts law states that the temperature must be set between 110° and 130° F and most dishwashers have coils to boost their internal water temperature.

Sixty percent (60%) of victims were male while the other 40% were female. Two out of the forty-two victims were scalded during work-related activities.

Hot Tap Water Scalds by Age Group



40% of Tap Water Scald Victims Were Under the Age of 5

Forty percent (40%) of the 42 hot tap water scald victims of known age were less than five years old. Some were very young infants placed in water that was too hot for their sensitive skin. Other children were interested in exploring their environment and turning on faucets. Adults may prepare a safe bath, but a child may turn on the hot water if left alone for a moment or two.

At 155° F it takes only one second to sustain a third degree burn. At 130° F it takes thirty seconds. At 120° F it can take a full five minutes to sustain a third degree burn.²

Massachusetts state law requires that the temperature for hot water heaters should be set between 110° and 130° F. It is important for homeowners to make sure their own water heaters are set in the appropriate range.

² Source: Knapp Burn Foundation

Five percent (5%) of the tap water victims were between the ages of five and nine; 5% were between 10 and 14 years old; 12% were between 15 and 24 years of age; 7% were between 25 and 34; 12% were between 35 and 44; 7% were between 45 and 54; 2% were between 55 and 64; another 2% were between 65 and 74; and the last 7% were in the range between 75 and 84 years old. There were no reported hot tap burn injuries to anyone over the age of 85.

Hot Cooking Liquids

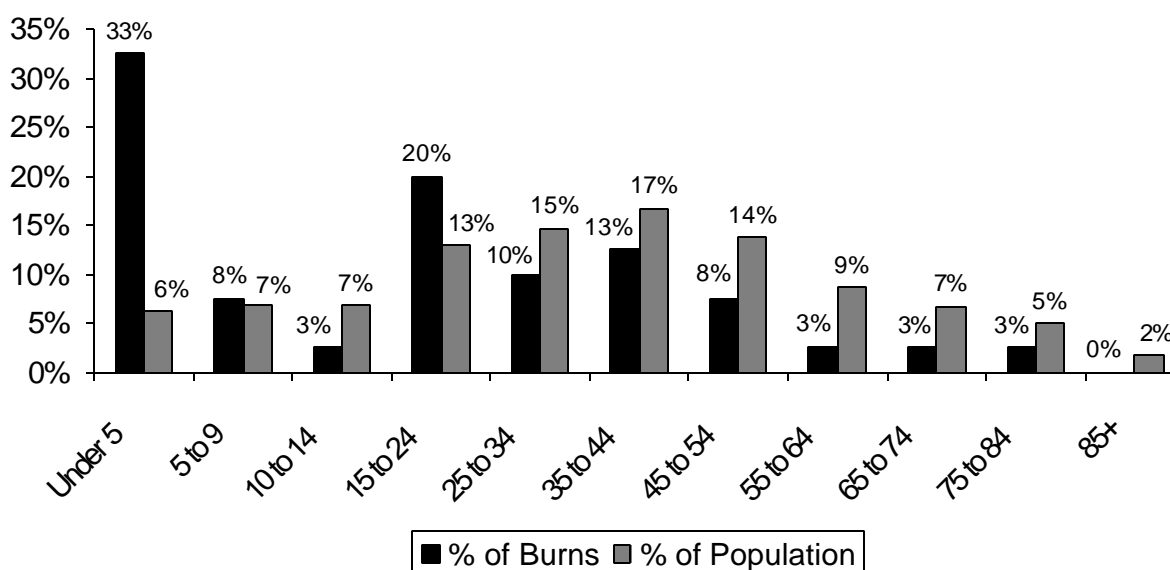
Hot Cooking Liquids Caused 21% of Scalds, 9% of All Burns

Hot cooking liquids caused 40, or 21%, of the 189 scald burns and 9% of the 467 burn injuries reported in 2000. Fifty-three percent (53%) of the victims were female and 47% were male. Hot cooking liquids scalded three people while they were at work.

1/3 of Cooking Liquid Scald Victims Were Under 5

The people most at risk for this type of burn are generally not even old enough to cook. Thirty-three percent (33%), or 1/3, of the cooking liquid scald victims were under five years old. They were five times more likely to be victims of a hot cooking liquid scald. Eight percent (8%) were between 5 and 9 years of age; 3% were between 10 and 14; members of the age group between 15 and 24 were in the second highest group of scalds caused by hot cooking liquids with 20%; 10% were between 25 and 34; 13% were between 35 and 44; 8% were between 45 and 54; and 3% each for the age groups 55 to 64, 65 to 74 and 75 to 84 years of age.

Hot Cooking Liquid Scalds by Age Group



Cooking Grease

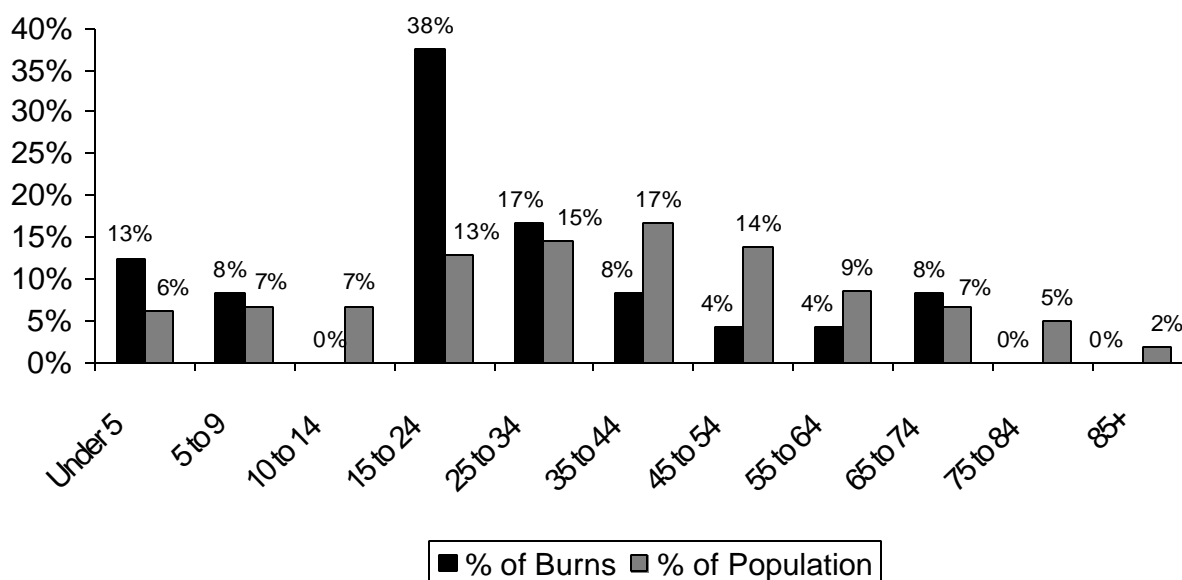
Cooking Grease Caused 13% of All Scalds, 5% of All Burns

Hot cooking grease caused 24, or 13%, of the 189 scald burns and 5% of the 467 total burn injuries reported in 2000. Forty-six percent (46%) of the 24 cooking grease scald victims were male and 54% were female. Five of the casualties were scalded while at work.

Cooking Grease Scalded Young Adults Most Often

For the first time since 1995, the age group from 15 to 24 years of age had the most victims of cooking grease scald burns with nine, or thirty-eight (38%) of the total. Thirteen percent (13%) were under 5 years old; 8% were between the ages of 5 and 9; 17% were between 25 and 34; last year's leading group of cooking grease scald burn victims 35 to 44 years old, showed a marked decrease to only 8%; 4% were between the ages of 45 to 54; another 4% were between 55 to 64 while the last 8% were between 65 and 74 years of age. No one over the age of 75 or between the ages of 10 to 14 was a reported victim of a cooking grease scald burn.

Cooking Grease Scalds by Age Group



This type of burn injury occurs predominantly to adults. Scalds from cooking grease combined with 13% of flame burns occurring in the kitchen makes the kitchen the place where burn injuries are most likely to take place. Since we must cook every day, we must learn to do so safely.

Safety Measures

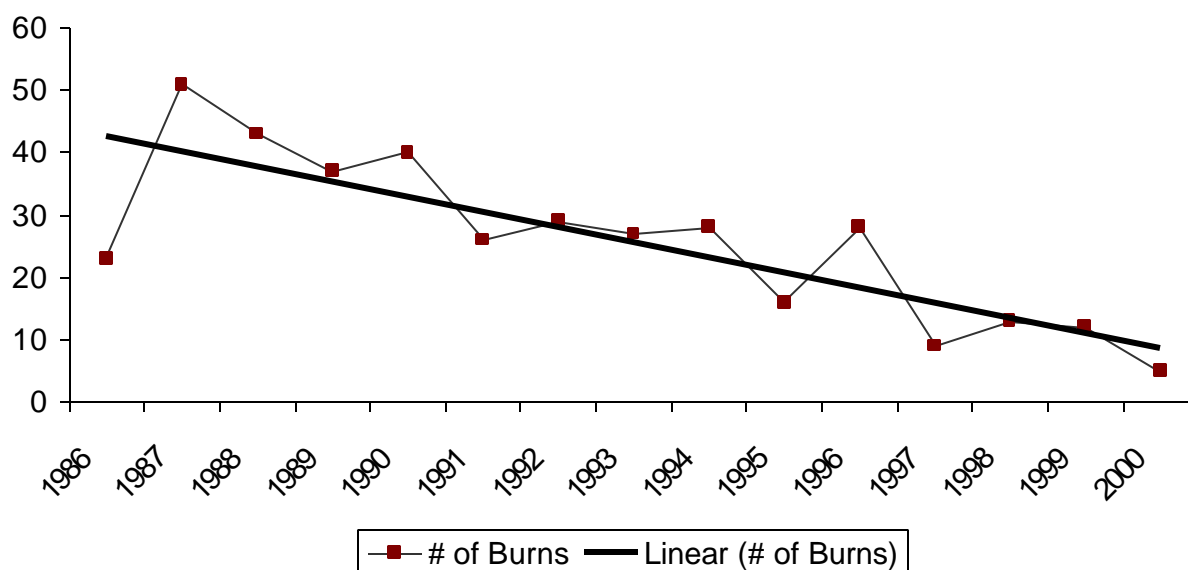
- ✓ Turn pot handles inward so children cannot pull them down.
- ✓ Never leave hot liquids or food unattended or at the edge of a table or counter to be pulled down by a toddler or a young child.
- ✓ Use mitts when carrying containers of hot liquid or food.

Hot Car Radiators

The improper opening of hot car radiators caused only three percent (3%) of the 189 scald burns and just 1% of the 467 burn injuries reported in 2000. This is a 50% reduction from the previous two years and the lowest count since the description of car radiator was differentiated from car part back in 1986. Over these past fifteen years, there has been a definite declining trend of scald burns from the improper opening of hot car radiators with a peak total of fifty-one occurring in 1987 to the current low of five in 2000.

Of the five reported scald victims from car radiators in 2000, all were male. One victim was between 10 and 14 years of age; one was in the age group between 25 and 34; another was in the group 45 to 54 years of age while the last two belonged to the 55 to 64 year old age group. All five of these burns occurred during a different month during the year.

Number of Car Radiator Scalds by Year



Safety Measures

- ✓ When your car overheats, keep in mind that the contents of the radiator are under tremendous pressure. If you open it, the boiling liquid and steam can erupt and cause severe burns to your hands, arms and face. Wait at least a half hour for the car to cool down, then use a rag to open slowly, releasing the pressure as slowly as possible.

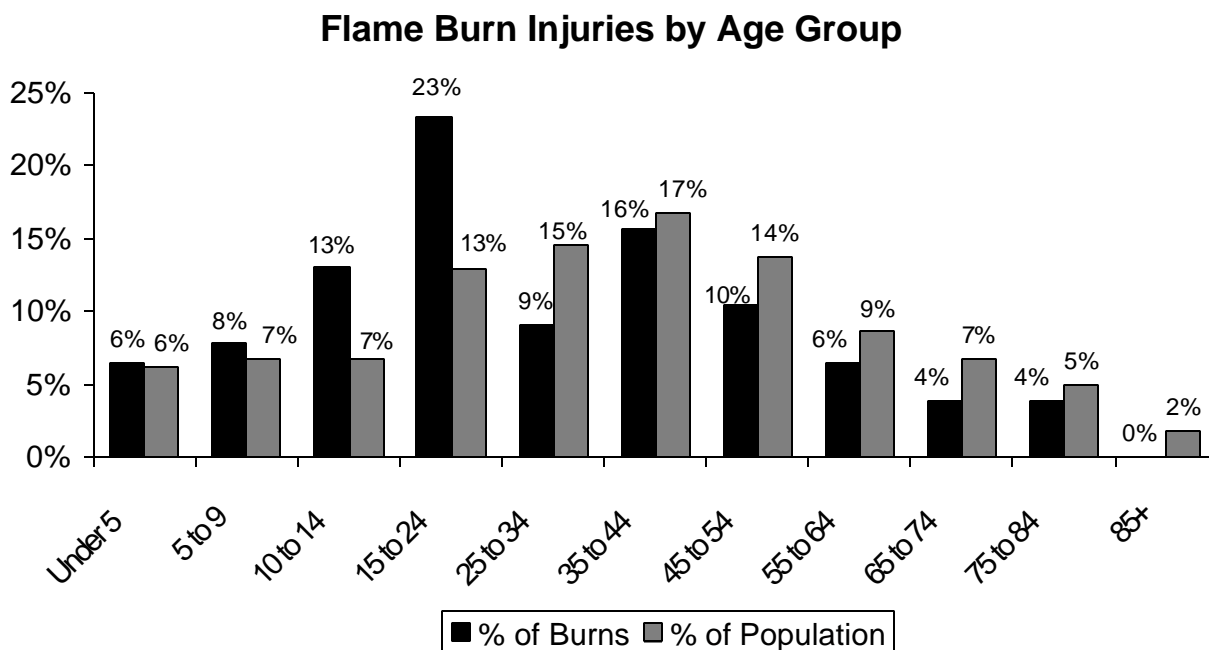
Burn Injuries Caused by Flames

Flames Caused 16% of Reported Burn Injuries

Flames caused 77, or 16%, of the 467 burn injuries reported in 2000. A burn is said to result from flame when the fire is confined to the victim or the victim's clothing. When a wider area burns, the cause of the injury is considered a fire. Burns caused by self-immolation, smoking in bed or burning clothing usually result from flames. Seventy-seven percent (77%) of the flame burn casualties were male and 23% were female. Six, or 8%, of the 77 flame burns occurred during work-related activities.

Children 10-14 & Young Adults 15-24 Faced Disproportionate Risk of Flame Burns

Six percent (6%) of the 77 flame burn victims were children under the age of five; 8% were between the ages of five and nine; 13% were between 10 and 14; 23% were victims with ages 15 to 24; 9% were between 25 and 34; 16% were between 35 and 44; 10% were between 45 and 54; 6% were between 55 and 64; 4% were between 65 and 74 with another 4% were between 75 and 84. There were no flame burn victims over the age of 85.



Two groups were at a higher risk for burns from flames. Children between the ages of 10 and 14 were nearly twice as likely to be burned by flames and young adults aged 15 to 24 were also nearly twice as likely to be burned.

Gasoline Involved In 1/5 of All Flame Burns

Twenty-one percent (21%) of the flame burns involved gasoline. Two injuries were related to children playing with gasoline and another two were work-related. Five percent (5%) involved other flammable liquids.

Seventeen percent (17%) of the flame burns involved cooking. Fifteen percent (15%) of these burns were from barbecuing and another 15% were from baking or broiling.

Welding was the fourth leading cause of flame burns, inducing 9% of the injuries.

Eight percent (8%) were caused by lighters with almost half of these being from children playing with lighters.

Smoking was the cause of 6% of flame burn injuries, including smoking while using home oxygen systems. Candles caused another 6%.

Flashburns contributed 4% of the flame burn injuries. Self-immolation, a pilot light, matches, a dryer fire and a car part were each responsible for 1% of these types of burns.

Six (6%) of flame burns could not be classified any further.

Clothing Ignitions Account for 1/5 of Flame Burn Injuries

Twenty-one percent (21%) of the flame burns involved clothing ignitions, including injuries sustained while cooking, smoking, using candles, children playing and other sources of clothing ignitions.

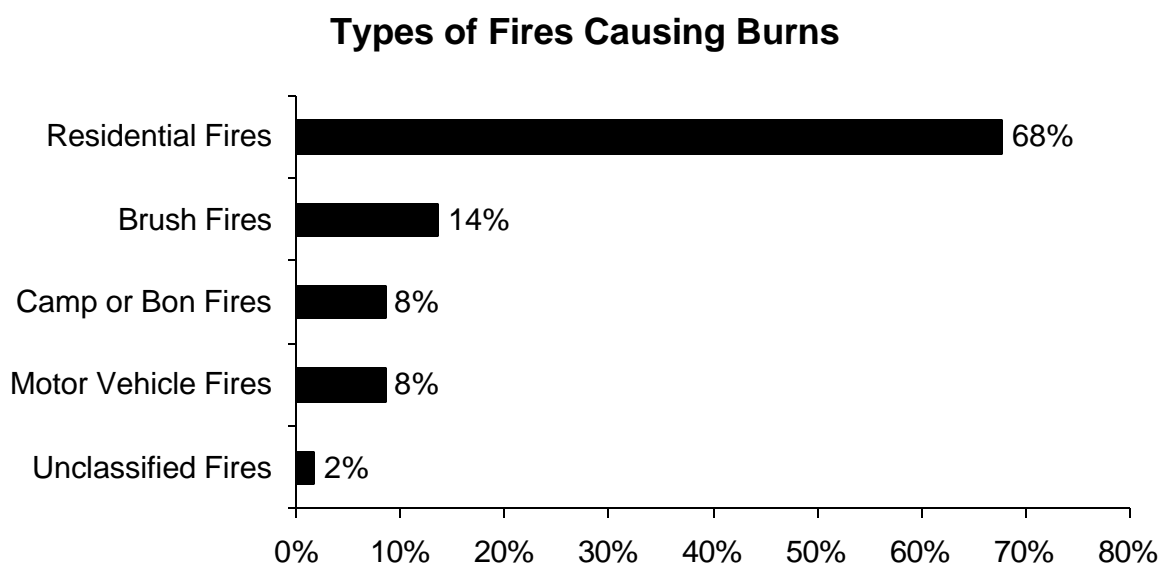
Burn Injuries Caused by Fires

Fires Caused 13% of Burn Injuries

Fifty-nine (59), or 13% of the 467 burn injuries reported in 2000 were caused by fires. Seventy-eight percent (78%) of the 59 victims were male and 22% were female. Analysis of data from the Massachusetts Fire Incident Reporting System found that the majority of fire injuries occurred while the victim was attempting to control the fire. Men are more likely than women to attempt to control the fire and become injured.

Over 2/3 of Fire Burn Injuries Occurred in People's Homes

Residential fires caused 68% of the 59 fire burn injuries reported in 2000. Fourteen percent (14%) of the fire injuries occurred in brush fires; 8% were due to camp or bon fires; another 8% were caused by motor vehicle fires and the last 2% occurred in unclassified fires.



Adults Ages 35 to 54 Are the Most Apt to Incur Fire Burn Injuries

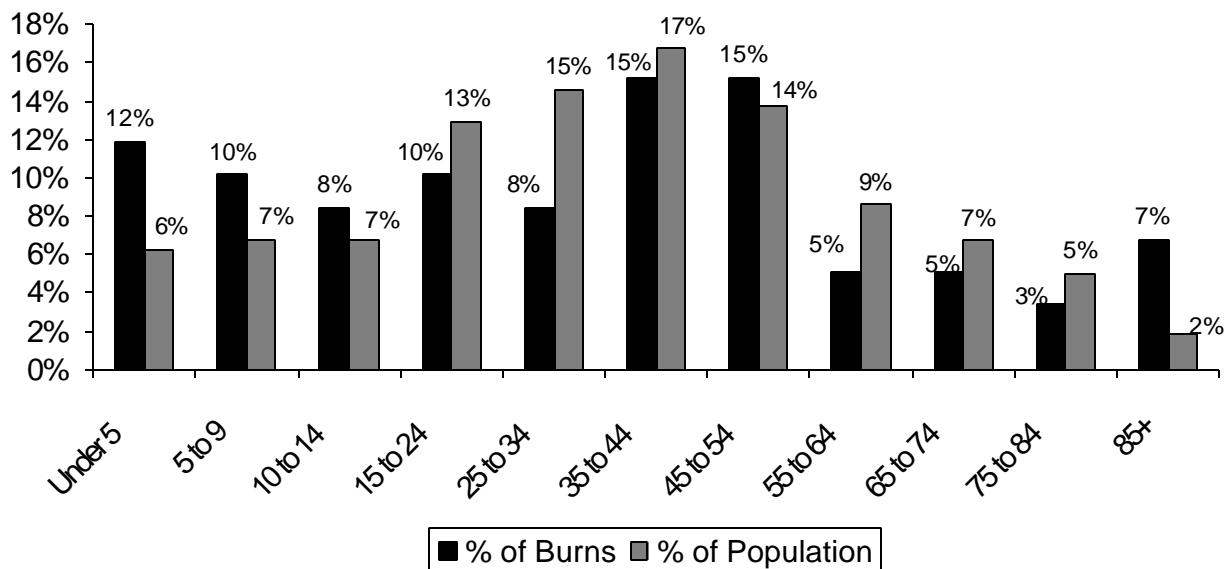
Twelve percent (12%) of the victims burned in fire incidents were under five years old; 10% were between five and nine years of age; 8% were between 10 and 14; 10% were between 15 and 24; 8% were between 25 and 34; 15% were between 35 and 44; with another 15% between the ages of 45 and 54; 5% were aged between 55 and 64; another 5% were aged between 65 and 74; 3% were between 75 and 84 and the last 7% of victims of fire burn injuries were over the age of 85.

Adults Over 85 are 3 Times More Likely to be Burned in a Fire

Children under five are at double the risk while adults over the age of 85 are at triple the risk of suffering injuries related to a fire. Children five to nine and 10 to 14 are also at a higher risk of these sort of injuries. The people under five and over 85 are also the least able to react quickly in

a fire emergency, or to act for themselves, and consequently the most vulnerable to burns due to fires.

Fire Burn Injuries by Age Group



Reported Burns Are a Fraction of Injuries From Fires

Only burn injuries that extend to 5% or more of the body surface area and are treated by a medical professional are reported to the Massachusetts Burn Injury Reporting System. Consequently, the human cost of fires is under-reported in this analysis. Smoke inhalation, cuts, fractures and less severe burns incurred while fighting or fleeing the fire are not recorded here. Fire deaths are not recorded. Properly maintained smoke detectors and quick-response residential sprinklers could prevent many of the injuries caused by fires. Detectors should sound an early warning to leave the area and quick-response sprinklers can control or possibly extinguish a fire in its earliest stages.

Refer to MFIRS Annual Report for More Information about Fires

For more information about the causes of fires and fire-related casualties, please refer to the *Massachusetts Fire Incident Reporting System – 2000 Annual Report*. Using data collected by the Massachusetts Fire Incident Reporting System (MFIRS), this report examines the causes of fires, fire deaths and fire injuries. Information is provided on fires in different occupancies and on special topics such as children and fire, fires caused by smoking, electrical fires, cooking fires and heating equipment fires.

Burn Injuries Caused by Hot Objects

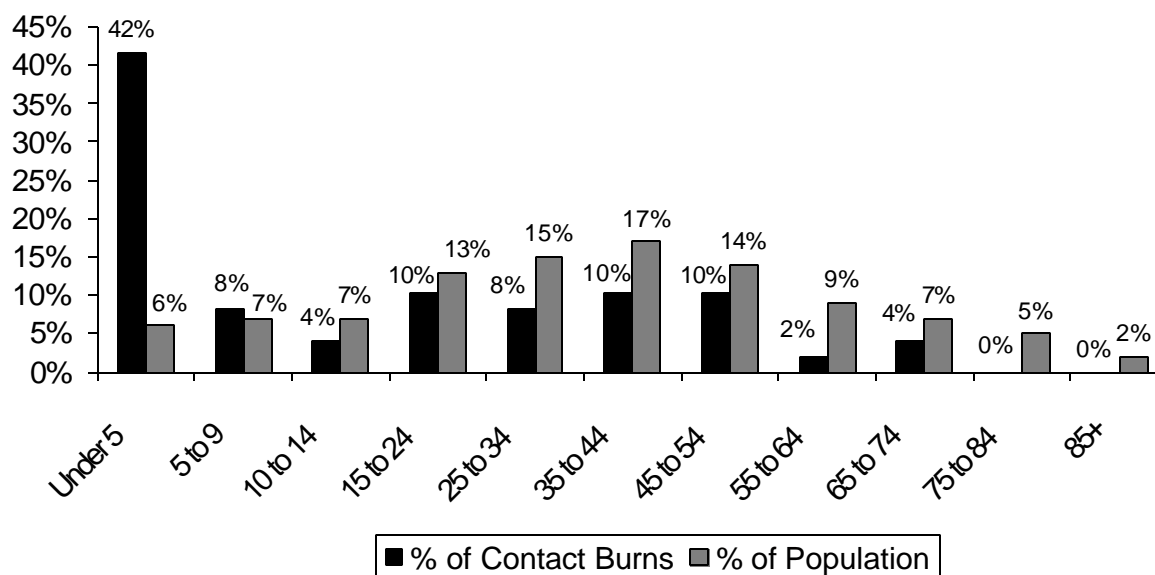
Contact with Hot Objects Caused 11% of Reported Burn Injuries

Fifty (50), or 11%, of the 467 burn injuries reported in 2000 were caused by contact with hot objects. Seventy percent (70%) of the burn victims were male and 30% were female. Six, or 12%, of these contact burns occurred at work.

Pre-Schoolers Faced 7 Times the Risk of Contact Burns

Almost half of all the 50 contact burns reported in 2000 were to children under the age of five. This age group accounted for 42% of all contact burns. Pre-schoolers faced seven times the risk of contact burns. This disproportionate risk could be the result of young children exploring their environment. Eight percent (8%) of these burn victims were between the ages of 5 to 9; 4% were between 10 and 14; 10% were between 15 and 24; 8% were between 25 and 34; the age groups 35 to 44 and 45 to 54 accounted for 10% each. Adults aged 55 to 64 accounted for only 2% while adults comprising the age group 65 to 74 were responsible for the last 4%. In 2000, no one over the age of 75 received a burn from contact with a hot object.

Contact Burn Injuries by Age Group



Stoves and Irons are the Leading Causes of Contact Burns

Irons contributed 20% of contact burns. Children under five comprised 89% of these burns. Stoves caused 18% of the 50 reported contact burns. Sixty-seven percent (67%) of these burns happened to children under five. Barbecue grills were the culprits in 10% of contact burns while heating equipment was the fourth leading cause at 8%, and cooking activities caused 6%. Lawnmowers, electrocutions, woodstoves and car parts each caused 4% of these burns. Toasters, pipes, machines, lamps, curling irons, clothing, appliances and airbags each caused 2% of the contact burns in 2000. Six percent (6%) of contact burns were not classified any further.

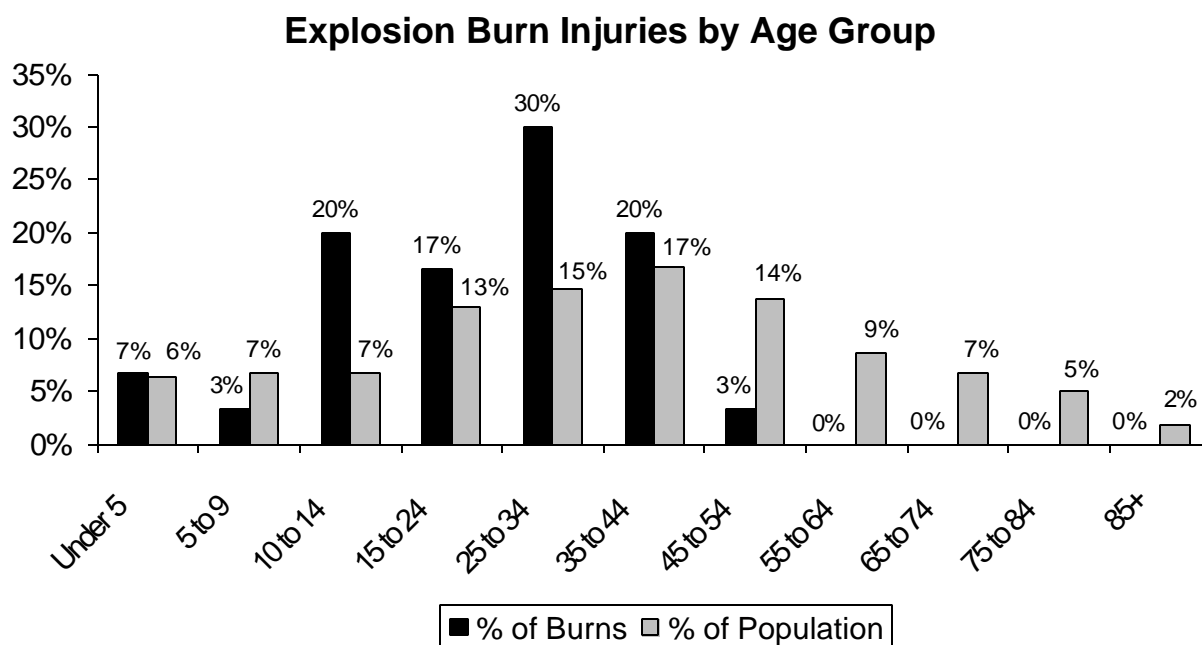
Burn Injuries Caused by Explosions

Explosions Caused 7% of Reported Burn Injuries

Thirty-one (31), or 7%, of the 467 burn injuries reported in 2000 were caused by explosions. Ninety-three percent (93%) of the explosion burn victims were male and seven percent (7%) were female. Only two burns, or seven percent (7%), occurred during work-related activities. This is a decided downturn from previous years, compared to 41% in 1999 and 26% in 1998.

Adults Ages 25 to 34 Face Greatest Risk of Explosion Burns

Seven percent (7%) of the explosion burn victims were under five years old; three percent (3%) were between the ages of five and nine; children between the ages of 10 to 14 were responsible for 20% of these injuries, this age group was three times as likely as any other age group to be burned by an explosion; 17% were between the ages of 15 to 24; the largest group, adults between the ages of 25 and 34 received 30% of the explosion related burns; 20% were between 35 and 44 and the final three percent (3%) were between 45 and 54 years of age. No one over the age of 55 received a burn injury due to an explosion.



Fireworks Are the Cause for 1/3 of All Explosion Burns

Fireworks accounted for 33% of all explosion related burns. Men were nine times as likely to be burned by a fireworks explosion. Half occurred during the month of July. Propane and gasoline tied as the second leading cause of explosion injuries at 10% each. Ignitable liquids accounted for 7%. Tar, natural gas, model rocket engines, lawnmowers, chemicals, bonfires and barbecue gas grills each accounted for 3% of the burn injuries. Thirteen percent (13%) of the reported explosion burn injuries were classified as unspecified explosions.

Electrical Burn Injuries

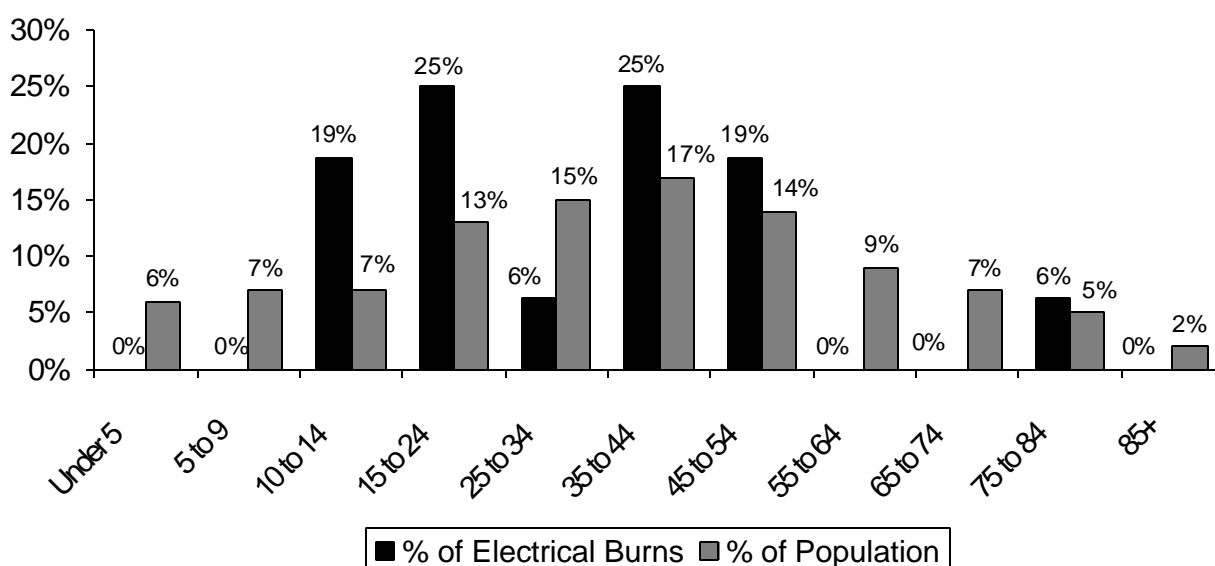
Electrical Incidents Caused 3% of Burn Injuries

Fourteen (14), or 3%, of the 467 burn injuries reported in 2000 were caused by electrical accidents. All but one of the electrical burn victims were male. Forty-three percent (43%) of these incidents occurred during work-related activities.

Children Aged 10 to 14 Are 3 Times More Likely to be an Electrical Burn Victim

No one under the age of 10 received a burn from an electrical source. Children between the ages of 10 and 14 received 19% of the electrical burns reported in 2000. These youngsters were three times more likely to be an electrical burn victim. Twenty-five percent (25%) were between 15 and 24, they were 1.9 times more likely to receive an electrical burn; 6% were between 25 and 34; those people aged 35 to 44, received 25% of the reported electrical burns, they were 1.5 times more likely to be an electrical burn victim; 19% were between 45 and 54 with the last 6% belonging to the age group of victims between 75 to 84. No one between the ages of 55 to 74 or over the age of 85 received an electrical burn.

Electrical Burn Injuries by Age Group



Nearly 3/4 of Electrical Burns are Caused by Electrocution

Electrocutions caused 71% of the reported electrical burn injuries in 2000. Fourteen percent (14%) were caused by unknown electrical mishaps. Explosions and flashburns³ each caused 7% of these burns.

Burn Injuries Caused by Chemicals

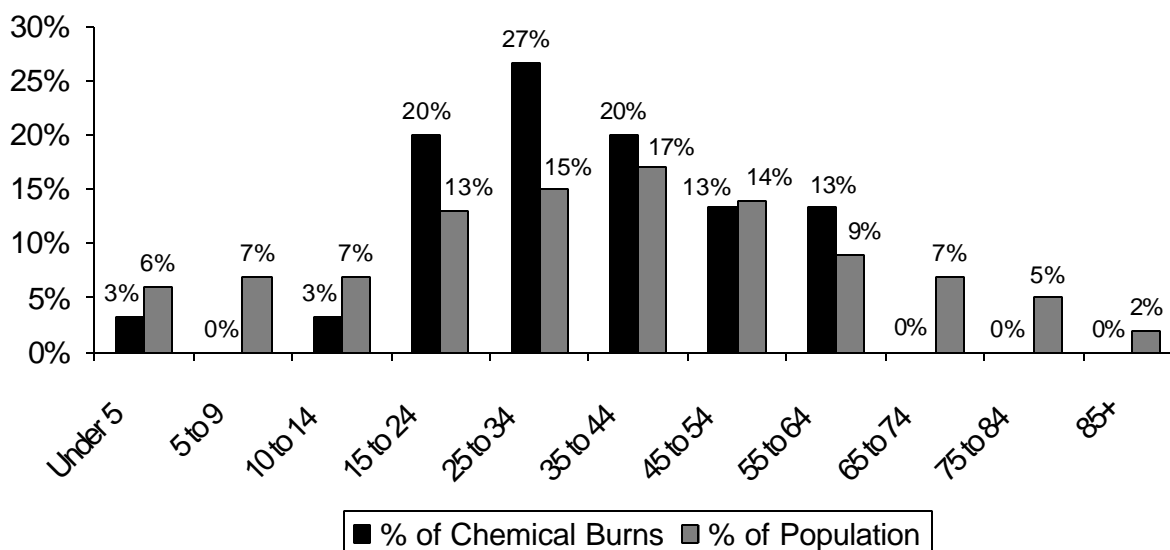
Chemical Exposures Caused 6% of Burn Injuries in 2000

Thirty (30), or 6%, of the 467 burn injuries reported in 2000 were caused by exposure to chemicals. Seventy-seven percent (77%) of the 30 victims were male and 23% were female. Men were three times as likely to be injured by a chemical burn than women. Health care facilities reported that 13, or 43%, of the 30 chemical burn victims were working when injured.

Over 1/4 of Chemical Burn Victims Were 25 to 34 Years Old

One of the chemical burn victims was under five years old. Another victim was between the ages of 10 and 14. Twenty percent (20%) were between the ages of 15 and 24; 27% were between 25 and 34, and they were nearly twice as likely to be burned by exposure to chemicals; 20% were between 35 and 44, 13% were between the ages of 45 to 54, and the last 13% were between the ages of 55 and 64 years old. No one over the age of 65 suffered a burn caused by a chemical. The youngest victim was two-year old girl and the oldest victim was a 58-year old man.

Chemical Burn Injuries by Age Group



³ A flashburn is a burn caused by a short-term exposure to super-heated air generally from an explosion; there is no direct contact with flame.

Gasoline Related Burn Injuries

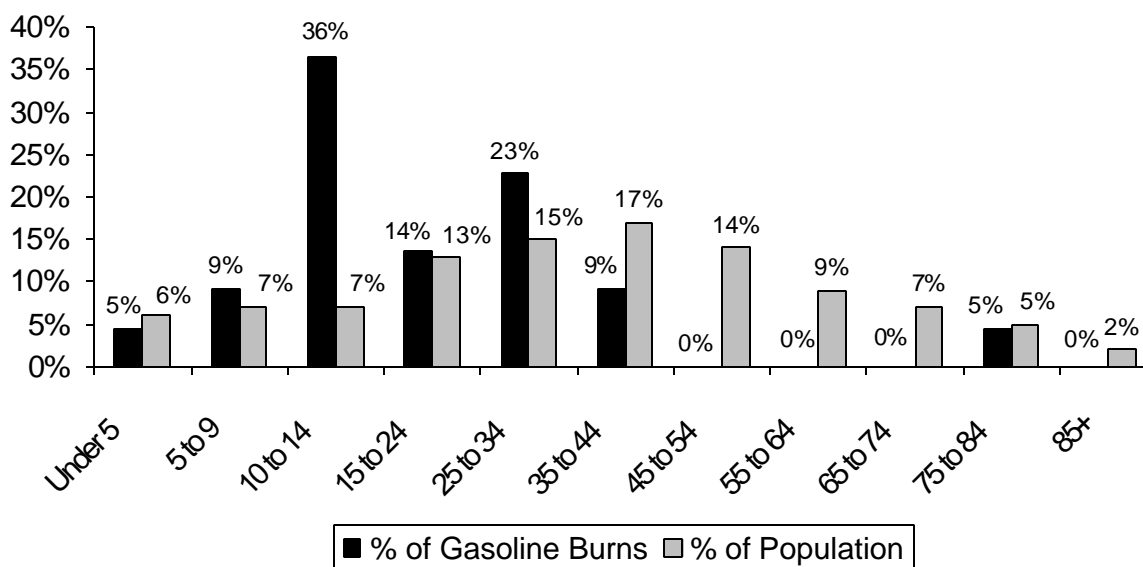
Gasoline Involved in 5% of Reported Burn Injuries

Gasoline was involved in 22, or 5% of the 467 burns reported to M-BIRS in 2000. Five, or 23%, of the burn injuries involving gasoline were caused by fires. The other 77% were the result of flame burn injuries. All but one of the victims were men. Only two of the incidents occurred during work-related activities.

Over 1/3 of Gasoline Related Burn Victims Were Between the Ages of 10 and 14

There was one victim under the age of 5; 9% were between the ages of five and nine. Thirty-six percent (36%) of the victims were between the ages of 10 and 14 years old. This age group has historically been the most at risk for these types of injuries. Children in this age group were five times more likely to receive a gasoline-related burn. Fourteen percent (14%) of the victims were between 15 and 24; 23% were between 25 and 34; 9% were between 35 and 44 while the last victim was in the age group 75 to 84. There was only one gasoline related burn injury to anyone over the age of 45. The youngest victim was under one-year old and the oldest victim was 73-years old.

Gasoline Burn Injuries by Age



It is actually gasoline vapors that burn, not the liquid itself. The vapors burn at a very low temperature, are heavier than air and can travel a distance to find a spark. A spark or lit cigarette is enough to light the invisible fumes that may linger on clothing. Gasoline is a tool, but a dangerous one, and it demands respect.

Some Safety Measures

- ◆* If you must store gasoline, store it outside the home in approved safety cans away from open flames (i.e. water heaters and pilot lights) and out of reach of children.
- ◆* Never regularly carry gasoline in your trunk.
- ◆* A one-gallon approved can could be carried empty to be used only for emergencies or a new approved less flammable type of emergency fuel.

Burns Caused by Cooking Activities

Cooking Activities Caused 1/5 of Reported Burn Injuries

Cooking activities caused 99, or 21%, of the 467 burn injuries reported to the Massachusetts Burn Injury Reporting System in 2000. Fifty percent (50%) of the 99 victims were female and the other 50% were male. Nine, or 9%, of the 99 people burned by cooking activities were working when injured.

Sixty-seven, or 68%, of the 99 burn injuries caused by cooking were scalds. Sixty-four percent (64%) were scalded by hot cooking liquids and cooking grease scalds accounted for 36% of the victims. Contact burns from stoves, grills or other cooking equipment caused 18% of these burns. Six percent (6%) of victims were burned when their clothing ignited while cooking; a total of 12% of cooking related burns were flame burns. Only one cooking related burn was due to an explosion and that was due to a barbecue gas grill. A house fire caused by cooking injured one person.

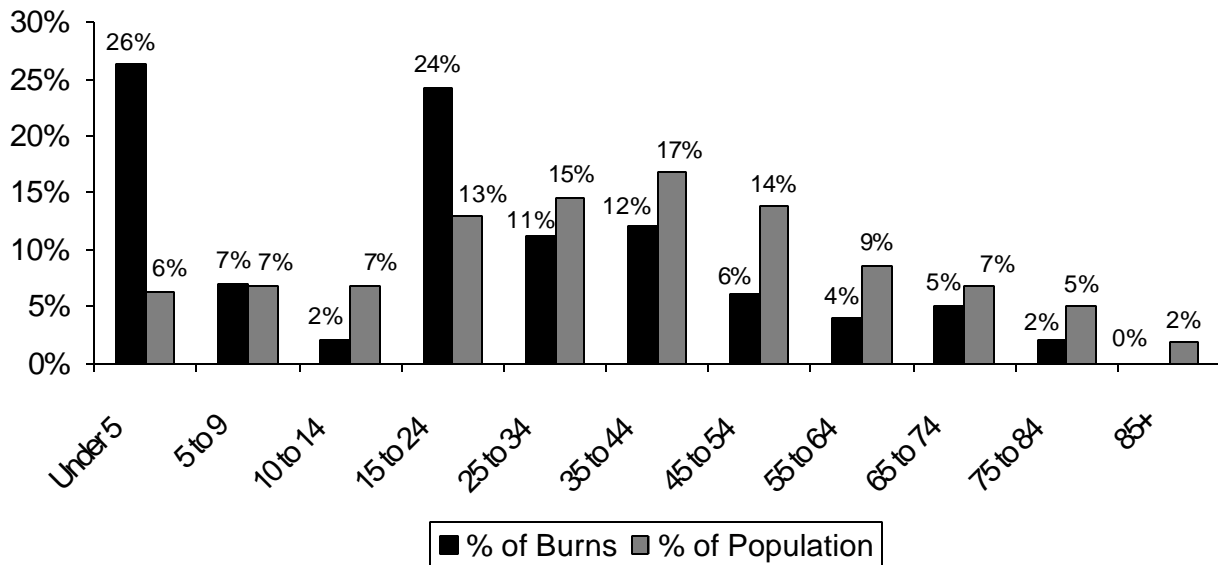
Children Under 5 Are Four Times as Likely to be Burned by Cooking Activities

Twenty-six percent (26%) of the cooking related burn victims were under age five. This age group is four times more likely to be burned by cooking related activities. Seven percent (7%) were aged between five and nine years of age; 2% were between 10 and 14; 24% were between 15 to 24 years old; 11 % were between 25 and 34; 12% were between 35 and 44; 6% were between 45 and 54; 4% were between 55 and 64; 5% were between 65 and 74; and the last 2% of the victims belonging to the age group between 75 and 84 years of age. No one over the age of 85 received a burn from cooking related activities. The youngest victim of a cooking related burn was four months old while the oldest victim was 81 years old.

The cause of burns varied with age. Pre-schoolers generally do not cook. They do, however, grab pot handles and sometimes get underfoot when adults are cooking. Cooking liquids or cooking grease frequently scalds them. Parents should keep young children away from the stove and food preparation areas while adults are cooking.


Young adults between the ages of 15 and 24 are the only other age group that is at a greater risk to be burned in a cooking related activity. The main causes of their cooking related burns were cooking grease, 38%, cooking (not specified) 38%, and barbecuing 13%. Many of the people in this age group are starting to cook by themselves for the first time. They also may be easily distracted by a variety of non-cooking related activities such as radio/stereo, television, telephone, younger children, friends and video games.

Cooking Related Burns by Age



In 2000, two-thirds of the victims of clothing ignitions while cooking were women; but unlike previous years only one was over the age of 34, she was 78 years old. Loose-fitting sleeves can come into contact with burners and catch fire.

Safety Measures

- ◆ Never leave cooking food unattended.
- ◆ Keep children at a safe distance from all hot items by using playpens, high chairs, etc.
- ◆ Create a safe zone for children.
- ◆ Test all heated food before giving it to young children.
- ◆ Keep pot handles turned in over the stove or countertop.
- ◆ Always use oven mitts or potholders.
- ◆ Secure loose sleeves or wear short sleeves while cooking.
- ◆ Keep an approved and maintained fire extinguisher easily accessible on the kitchen wall.
- ◆  Never use water on a stove top grease fire.
- ◆ Read and follow directions when using microwave ovens and other heating appliances.
- ◆ Children should not be allowed to use cooking/heating appliances until they are mature enough to understand safe-use procedures and tall enough to safely handle items and reach cooking surfaces.
- ◆ If cabinets exist over cooking surfaces use them to store items, which will not be needed during cooking, or items which will not attract children.
- ◆ When barbecuing, use only charcoal lighter fluid to start a fire. Once the coals have been ignited, never add more charcoal lighter fuel to the fire; the container may explode in your hand.
- ◆ Dispose of used coals in a proper container away from the house or porch.

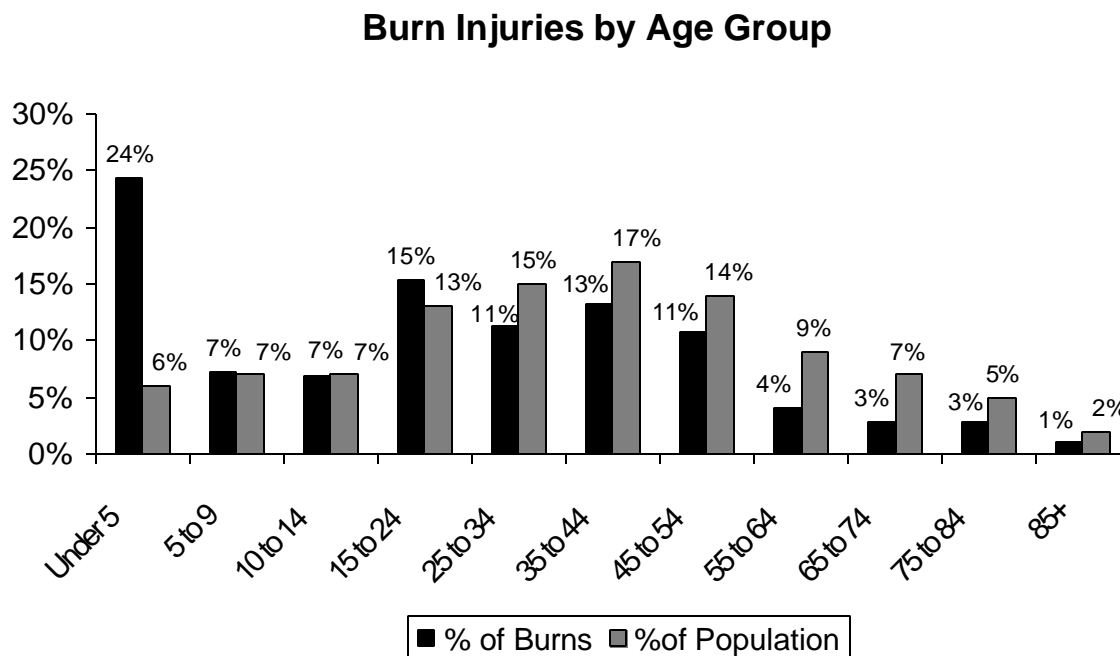
Burn Injuries by Age Group

Although burn injuries were reported in all age groups, very young children suffer more than their share. One quarter (24%) of all burn victims were children under the age of five. Seventeen (17) infants under a year old accounted for four percent (4%) of the 467 victims. This is a 600% increase in the number of injuries from the 1999 figures, three infants under a year, and a 200% increase over the 1998 figures of eight infants less than a year old.

Children Under 5 At Highest Risk of Burn Injuries

The graph below compares the percentage of burn injuries incurred by each age group with the percentage of that age group in the general population. Only 6% of the population in Massachusetts is under the age of five (source: 2000 U.S. Census data). We would expect therefore that children under five would account for 6% of the burn injuries. In fact, they accounted for 24% of the reported burn injuries in 2000, making them four times more likely to suffer burn injuries. Children of this age group are the most dependent on others to protect them and are not able to move out of harm's way unassisted.

Scalds were the leading cause of burn injuries in every age group except children between the ages of 10 and 14 where flame burns were the leading cause.



To learn more about the specific causes and prevention strategies for each age group, please look at the age specific sections within *Burn Injuries by Age Group*.

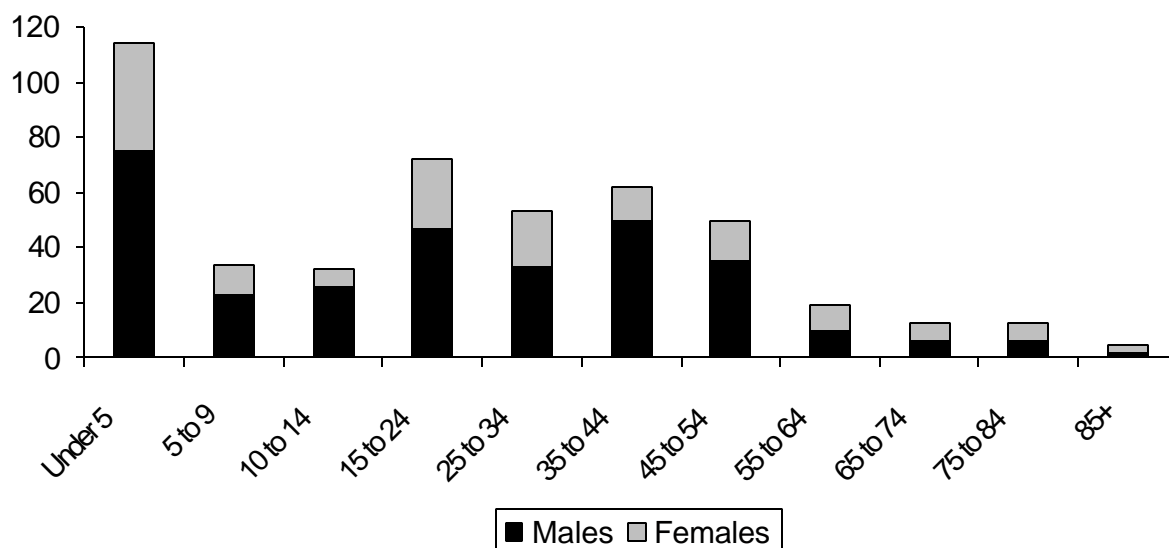
Causes of Burn Injuries by Age and Gender

The leading causes of burn injuries vary widely between age groups depending on the nature of activities in which people are involved. Children under five are busy exploring their environment and reaching for anything in their grasp. Thirty-four percent (34%) of the burns incurred by these young children were scalds caused by hot beverages and another 15% were caused by hot tap water scalds. Cooking grease scalds, the improper opening of hot car radiators, gasoline and chemicals were frequent causes of burn injuries to older teens and young adults.

Parents of young children must be educated about the danger of scalds from hot beverages, cooking liquids and tap water. Teens and young adults need information about cooking safely, procedures to follow when a car overheats and the correct uses of gasoline. To be effective, burn prevention educators must develop strategies that address the risk faced by each age group.

Up until 65 years of age, males are burned more frequently than females. In 2000, two-thirds of the burn victims were male. Three hundred and thirteen (313), or 67%, of the 467 burn victims were male, and 154, or 33%, were female.

Burn Victims by Age and Gender



Children Under 5

1/4 of Reported Burns Incurred by Children Under 5

One hundred and fourteen (114), or 24%, of the burn injuries reported to M-BIRS in 2000 were incurred by children under five years old. According to the 2000 U.S. Census, only 6% of Massachusetts residents are under the age of five. Children under five were four times as likely to be burned as were members of the general population. No other age group faced a risk this high. Sixty-six percent (66%) of burned pre-schoolers were male and 34% were female.

Scalds Caused Over 2/3 of Burns to Pre-Schoolers

Scalds caused 77, or 68%, of the burn injuries incurred by children under five: 39 from hot beverages, 17 from hot tap water, 16 from hot cooking liquids, three from cooking grease, one from melted material, and one from a hot car radiator.

Contact burns accounted for 18% of the injuries to children under the age of five; eight from an iron, six from a stove, two from a lawnmower, one each from a woodstove, lamp, heater and an unspecified cooking activity.

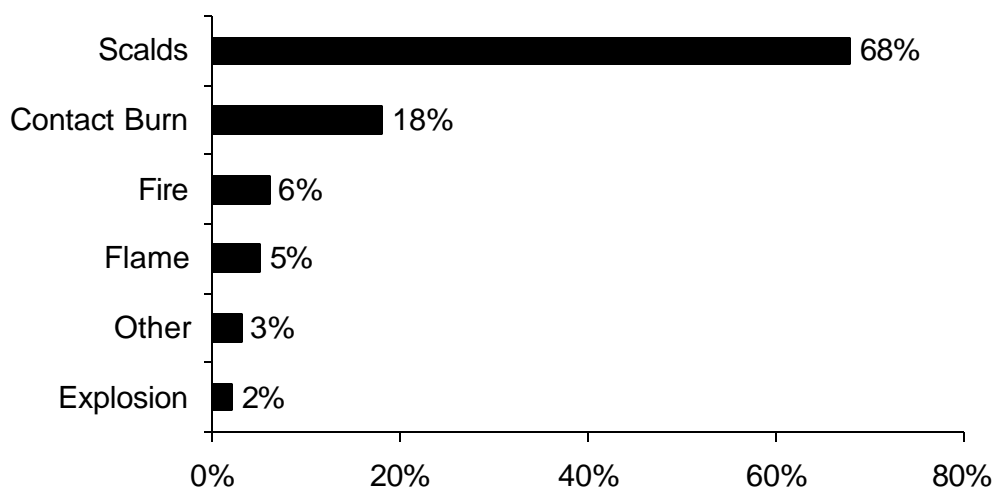
Fire caused 6% of the injuries to this age group. Children under five were burned in five house fires, one brush fire and one campfire.

Flame burns caused 5% of burns to this age group. One incident each of a child playing with gasoline, playing with a lighter, a dryer fire, a candle igniting a child's clothing, and a flashburn were reported.

Two explosions caused by the illegal use of fireworks, accounted for 2% of burn injuries to pre-schoolers.

Other burn injuries accounted for three burns to children under the age of five.

Leading Causes of Burns to Children Under 5



Children Ages 5 to 9

7% of Reported Burn Injuries Incurred by Children 5-9

Thirty-four (34), or 7%, of the burn injuries reported in 2000 were incurred by children between five and nine years of age. Twenty-three (23), or 68% of the burn victims were male, and 11 or 32%, were female. Children in this age bracket accounted for 7% of the population of Massachusetts and 7% of the injuries in 2000.

Scalds Caused Almost 1/2 of All Burns to Children 5-9

The leading cause of burn injuries to children aged five to nine were scalds, flame burns, fires, contact burns and explosions.

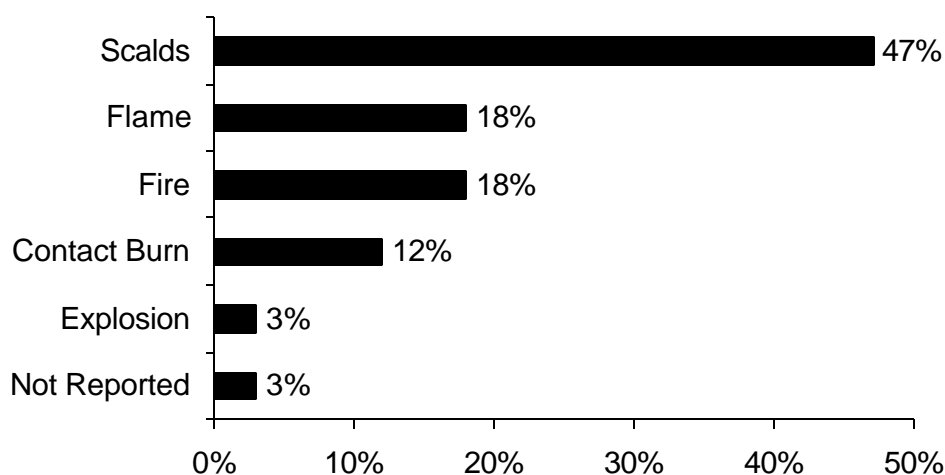
Scalds caused 16, or 47%, of the burn injuries incurred by children aged five to nine in 2000. The scald burn injuries included eight from hot beverages, three from cooking liquids, two from hot tap water and one from melted materials

Flame burns accounted for 18% of the burn injuries to this age group; four injuries were from clothing igniting, one from a gasoline ignition and one from a child playing with a lighter.

Fires caused another 18% of the burn injuries to children between the ages of five and nine. Five of these victims were from three house fires. Two of the house fires had two young victims each. The remaining victim, a nine year old, was burned while trying to extinguish a fire from a bowl of gasoline and oil.

Contact burns caused 12% of the burns to children aged five to nine; two injuries were caused by an iron and one each a stove and a barbecue. An explosion of a propane tank was the cause for the burn injuries to one six year old. The cause of burn to one child was not reported.

Leading Causes of Burns to Children Ages 5 to 9



Children Ages 10 to 14

7% of Reported Burns Incurred by Children 10-14

Children between the ages of 10 and 14 suffered 32, or 7% of the burn injuries reported in 2000. Twenty-six (26), or 81% were male and six, or 19%, were female. Children in this age bracket accounted for 7% of the population in the Commonwealth of Massachusetts in 2000 and also accounted for 7% of the total reported burn injuries. At this age, children are exploring their environment more on their own, but often without the maturity or experience to reason out cause and effect.

Flame Burns Were the Leading Cause of Burn to Children 10-14

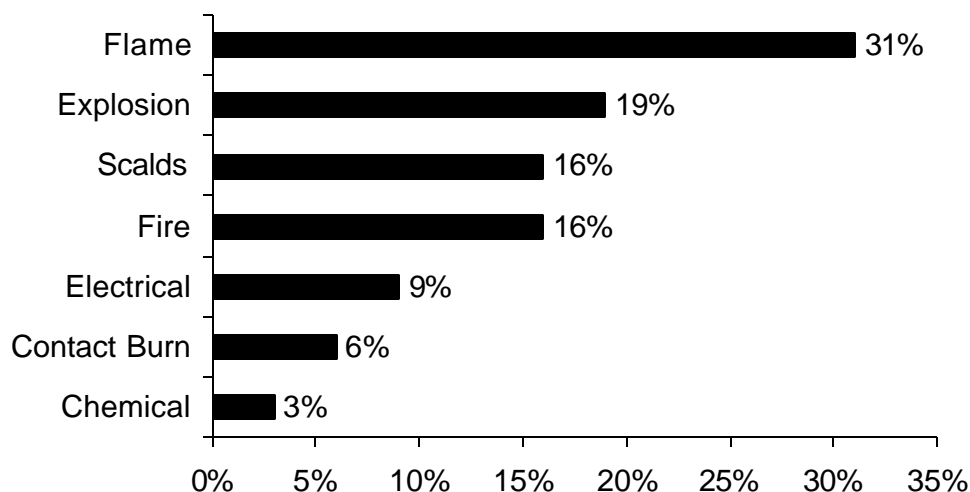
Flame burns caused 10, or 31% of the 32 burn injuries to children ages 10 to 14. This is the only age group in which scald burns were not the leading cause of burn injuries. The causes of flame burn injuries included seven ignitions of gasoline, one ignition of another type of ignitable liquid, one clothing ignition and one incidence of a child playing with a lighter.

Nineteen percent (19%) of the injuries were due to explosions. Fifty percent (50%) of these injuries were the end result of the illegal use of fireworks while the other 50% were of unknown origin.

Scalds represented 16% of the burns incurred by children aged 10 to 14; two were from hot tap water, one was from steam, one from a radiator and one from cooking liquids. This is the only age group where scalds were not the leading cause of burns.

Sixteen percent (16%) of the burn injuries were due to fires: two house fires, two camp or bonfires and one brush fire. Nine percent (9%) of burn injuries incurred by this age group were electrical burns caused by electrocutions. Six percent (6%) were from contact burns: one barbecue grill and one unspecified contact burn. Other burn injuries, a chemical burn, accounted for the remaining 3% of burn injuries suffered by children between the ages of 10 and 14.

Leading Causes of Burns to Children Ages 10 to 14



Ages 15 to 24

15% of Reported Burn Victims Between 15-24

Teens and young adults between the ages of 15 and 24 incurred 72, or 15%, of the burn injuries reported in 2000. Forty-seven (47), or 65%, were male and 25, or 35%, were female. Young adults aged 15 to 24 account for 13% of the population of Massachusetts and 15% of the burn injuries in 2000. Eleven (11), or 15%, of the burn injuries incurred by this age group were work-related.

Over 1/3 of Burns Were Scalds

Scalds were the leading cause of burn injuries to this age group. Thirty-six percent (36%) of the burn injuries incurred by people aged 15 to 24 were scalds. Cooking grease scalded nine victims; eight received burns from hot cooking liquids, five from hot tap water, two from hot beverages and one each from melted materials and steam.

Twenty-five percent (25%) of the burn injuries were caused by flames. Gasoline ignitions accounted for three of these burns. Barbecue grills, candles, welding and clothing ignitions while cooking accounted for two burns apiece, while a flashburn, lighter and matches accounted for one injury each. There were three unspecified flame burns for this age group.

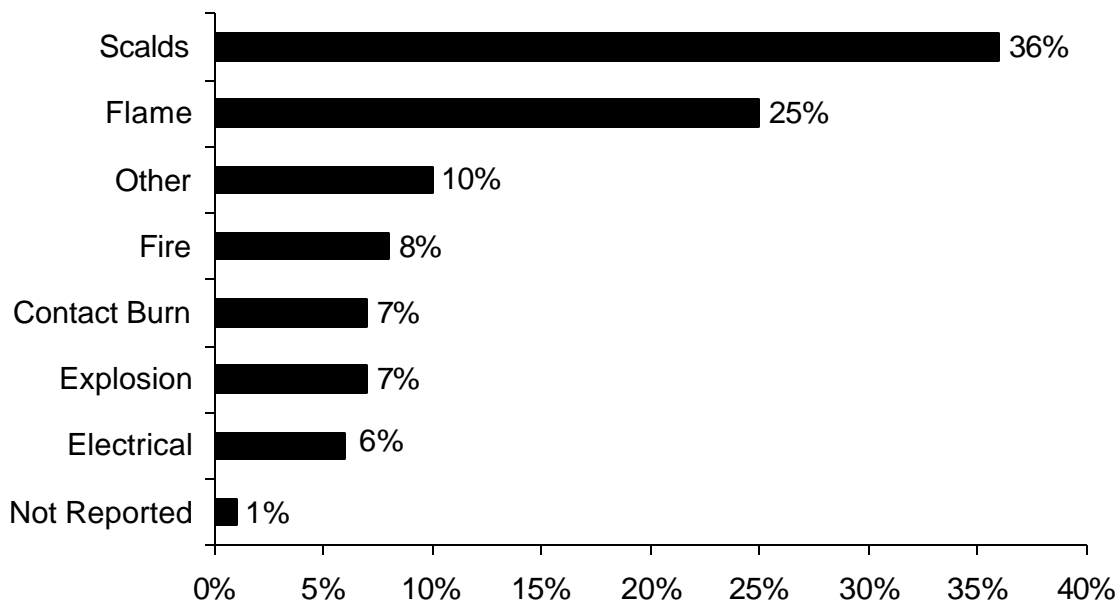
Ten percent (10%) of the burn injuries incurred by this age group were grouped in the “other” category: six were chemical burns and one was a sunburn.

Eight percent (8%) of the burn injuries to people 15 to 24 years of age were caused by four house fires and two car fires.

Contact burns accounted for 7% of burn injuries suffered by victims between the ages of 15 and 24. One burn was caused from contact with a stove, an airbag, a car part, a cooking activity and a machine.

Explosions injured 7% of people in this age category. Two injuries were the result of illegal use of fireworks, two more injuries were caused by propane and one was an accident with a gas grill. Six percent (6%) of the burns were electrical in nature. These were due to three electrocutions and one electrical explosion. One young adult’s injury was caused by self-immolation, but the actual cause was not reported.

Leading Causes of Burns to People Ages 15 to 24



Ages 25 to 34

1/4 of Reported Burns Were Work-related

Fifty-three (53), or 11%, of the burn injuries reported in 2000 were incurred by people between 25 and 34 years of age. Thirty-three (33), or 62%, of the victims were male and 20, or 38% were female. Seventeen (17), or 26%, of the burn injuries suffered by this age group were work-related. People between the ages of 25 and 34 accounted for 15% of the population of Massachusetts while accounting for 11% of the total number of burn injuries reported in 2000.

Over 1/4 of Burn Injuries Were Scalds

Scalds were the leading cause of burns (28%) to people between the ages of 25 and 34. These scald burns included four burns by cooking grease, four by cooking liquids, three from hot tap water, two from hot beverages, one from a hot car radiator and the last one from a melted material.

Another 19% of the burns incurred by this age group were classified as “other” burns: eight chemical burns, one sunburn and one assault.

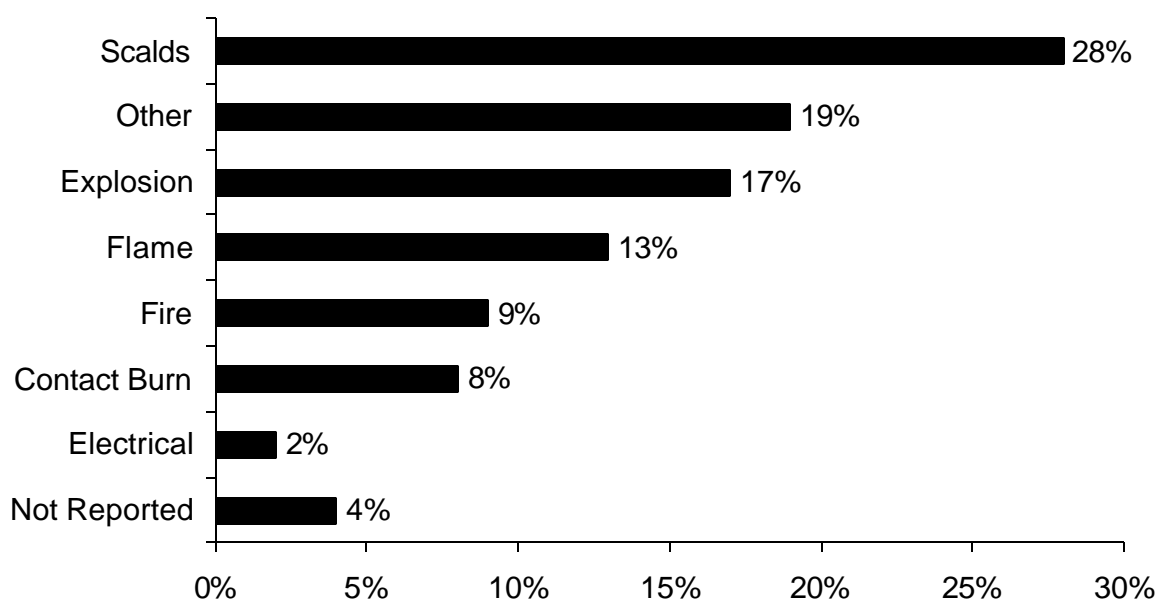
Seventeen percent (17%) of the burns were caused by explosions; three were attributed to gasoline, two to fireworks, and one each to a flammable material, a lawnmower, natural gas and tar.

Flame burns caused 13% of the injuries to 25-34 year olds. These flame burns included: two from welding, two from gasoline, two from clothing ignitions (one while cooking), and one from lighting a pilot light.

Five fires - three house fires, one camp or bon fire and one brush fire - accounted for 9% of the injuries to this age group. One victim of one of the house fires was a firefighter engaged in fire suppression.

Contact burns accounted for 8% of the burn injuries to people between the ages of 25 and 34. These four burns were incurred from coming into contact with grills (2), a car part (1) and an appliance (1). Two percent (2%) of the burns to this age group were the result of an electrical accident. This one victim was burned by an unspecified electrical accident while two other victims received burns from unspecified means.

Leading Causes of Burns to People Ages 25 to 34



Ages 35 to 44

13% of Reported Burn Victims Were Between 35 and 44 Years of Age

Sixty-two (62), or 13%, of the burn injuries reported in 2000 occurred to people between the ages of 35 and 44. Fifty (50), or 81%, of the victims were male and 12, or 19%, of the victims were female. Fourteen (14), or 23%, of the burn injuries incurred by this age group were work-related. Persons between the ages of 35 and 44 accounted for 17% of the Massachusetts population but only 13% of the reported burns in 2000.

Over 1/4 of Burn Injuries Were Scalds

Scalds were once again the leading cause of burn injuries to adults between the ages of 35 and 44. Eighteen (18), or 29%, of the injuries incurred by this age group were scalds; five were from hot tap water, another five were from cooking liquids, three were from steam, two from cooking grease, and one each from a hot beverage, a melted material and automotive oil.

The next leading cause of burns to people between 35 and 44 years of age was flame burns. All 12 of these victims were male and none were work-related. Two of the injuries were caused by smoking, two more by welding, and one each by a car part, an unspecified cooking activity, an ignitable liquid, a flashburn, a gasoline ignition, a clothing ignition from burning brush, a lighter and an ignition from a stove.

Nine fires accounted for 15% of the burn injuries to this age group. There were four house fires, three brush fires, one airplane crash, and one car fire.

Contact burns accounted for 8% of the burns to this group; a heater, a stove, a pipe and a barbecue and one contact burn of unspecified origin each caused on injury.

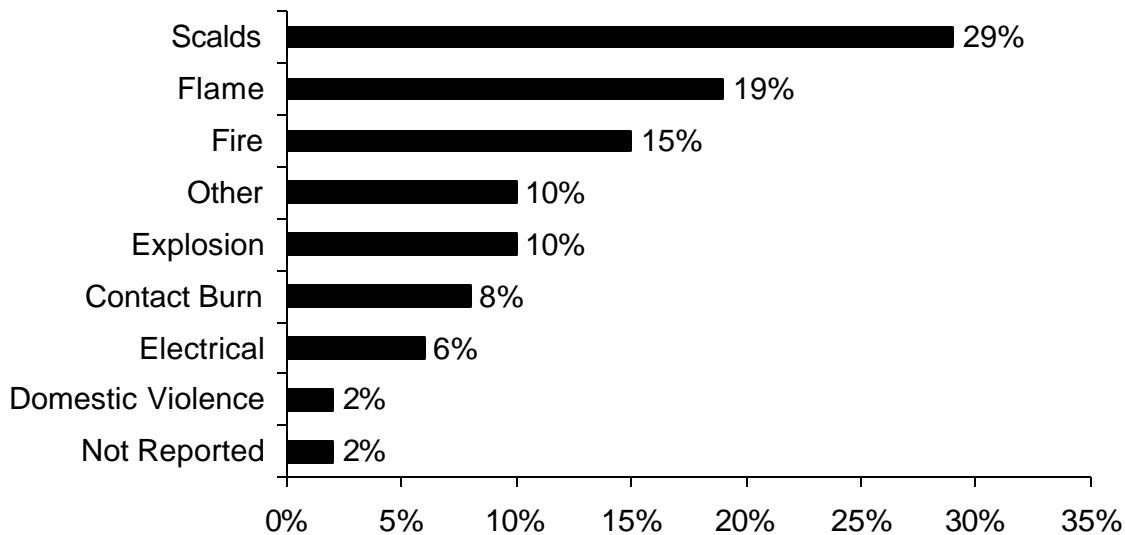
“Other” burns accounted for 10% of the injuries to people between the ages of 35 to 44. These six burns were all chemical burns and all work-related.

Explosions also accounted for 10% of the total burn injuries. All six of the explosions were caused by something different; one was in a fireplace, one was from fireworks, one from a bonfire, another from a chemical, one from an ignitable liquid and one from an explosion of unknown origin.

There were four (4) electrical burns accounting for 6% of the total number of burns for this age group. Three of the four burns were from electrocution with the fourth being from an unspecified electrical accident. Three of the four burns were also work-related.

There was one case of a victim incurring her burn injuries through domestic violence. This incident accounted for 2% of total burn injuries to this age group. The cause of the one remaining burn injury was not reported accounting for the last 2%.

Leading Causes of Burns to People Ages 35 to 44



Ages 45 to 54

11% of Reported Burn Injuries Were Between 45 and 54 Years of Age

People between the ages of 45 and 54 incurred 50, or 11%, of the reported burns in 2000. Thirty-five (35), or 70%, of the victims were male, and 15, or 30%, were female. Nine of the 50 burn victims aged 45 to 54 were burned while at work. This age group represents 14% of the population of Massachusetts while it only received 11% of the burn injuries in 2000.

Scalds Cause Close to 1/3 of the Burn Injuries

Scalds were the leading cause of burn injuries to this age group. In 2000, scalds caused 30% of the burn injuries to people aged 45 to 54. These scald burns included five from hot beverages, three from hot tap water, three from cooking liquids, and one each from a radiator, steam, cooking grease and automotive oil.

Nine fires – seven house fires, a car fire and a camp or bon fire – accounted for 18% of the burn injuries to this age group.

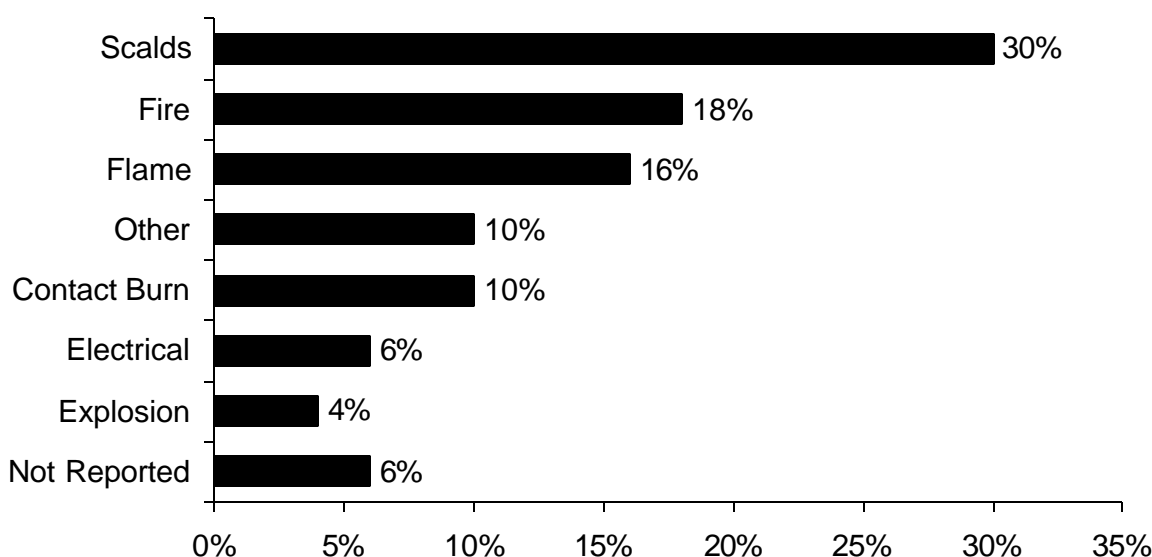
Flame burns were incurred by 16% of the people between the ages of 45 and 54. These flame burns were from a clothing ignition, a hot object, an unspecified cooking activity, welding, smoking, contact with a stove and two unknown causes.

Ten percent (10%) of the burn injuries to this age group were attributed to “other” causes. Four of these burns were due to chemicals and the fifth was a flashburn. Another 10% of the burns were contact burns. A curling iron, a wood stove, a portable heater, one victim’s clothing became

caught and he burned himself on the machine he was working on, and one contact burn not specified any further were the causes of these contact burns.

There were three electrical burns, accounting for 6% of the burns to people between 45 and 54 years of age, two electrocutions and one flashburn. There was one victim of an explosion of a model rocket engine. This accounted for 4% of the burn injuries to this age group. The causes of three burns were not reported.

Leading Causes of Burns to People Ages 45 to 54



Ages 55 to 64

4% of Burn Victims Were Between 55 and 64 Years Old

Nineteen (19), or 4%, of the burns reported in 2000 were incurred by people between the ages of 55 and 64. Ten (10), or 53%, of the victims were male, and nine, or 47% were female. Two, or 11%, of the 19 burn injuries incurred by people between 55 and 64 years old were reported to be work-related. People of this age group represent 9% of the total population of Massachusetts but only received 4% of the burns in 2000.

1/3 of Burn Injuries Were Scalds

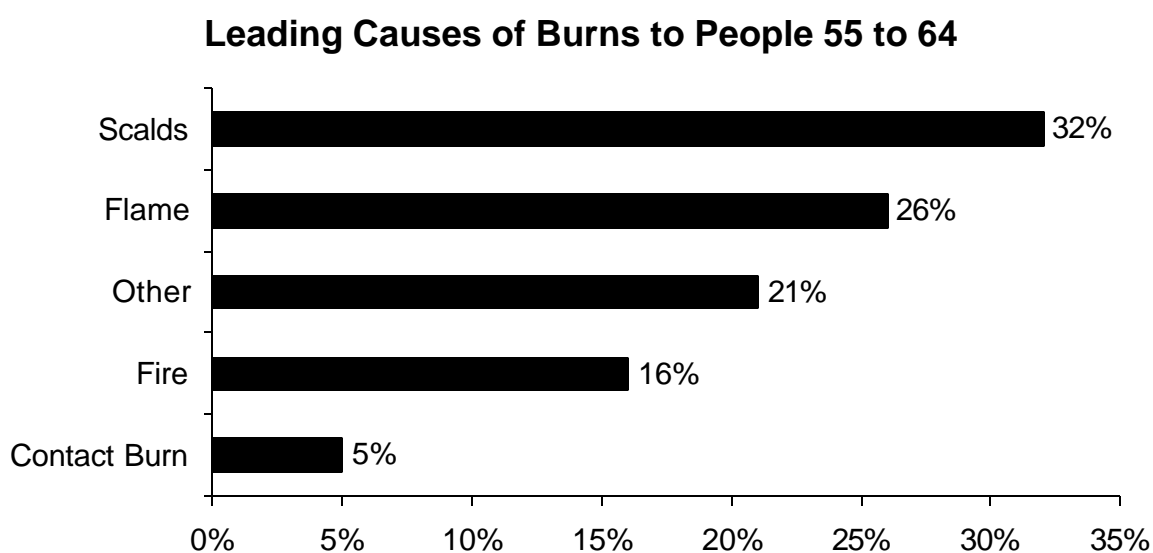
Scalds were the leading cause of burn injuries to this age group. Thirty-two percent (32%) of the burn injuries incurred by people between the ages of 55 and 64 were scalds. These scald burns included two from radiators, one from a hot beverage, one from cooking grease, one from hot tap water and one from cooking liquids.

Flame burns accounted for 26% of the injuries to this age group. Two of the burns occurred when the victim was smoking while on oxygen, one involved ignitable liquids, one was a clothing ignition while cooking and the last involved a candle.

Chemical burns accounted for four, or 21%, of the injuries incurred to this age group. All four of the “other” type burns to people 55 to 64 years old were chemical burns.

Fires caused 16% of the burn injuries to this age group. Three people in this age group were burned in two house fires and one brush fire. Smoking was involved in one of the house fires.

One victim received a contact burn while cooking accounting for 5% of the burn injuries to adults between the ages of 55 and 64.



Over 65

31 Burn Victims Over 65

Thirty-one, or 7%, of the burn victims in 2000 were over 65 years old. Thirteen were between 65 and 74; 13 were between 75 and 84 and five were over 85 years old. Fourteen (14), or 45% of the victims were male, and 17, or 55%, were female. Older adults represent 14% of the total Massachusetts population but only 7% of the burn injuries in 2000.

Scalds Are the Leading Cause of Burns to Older Adults

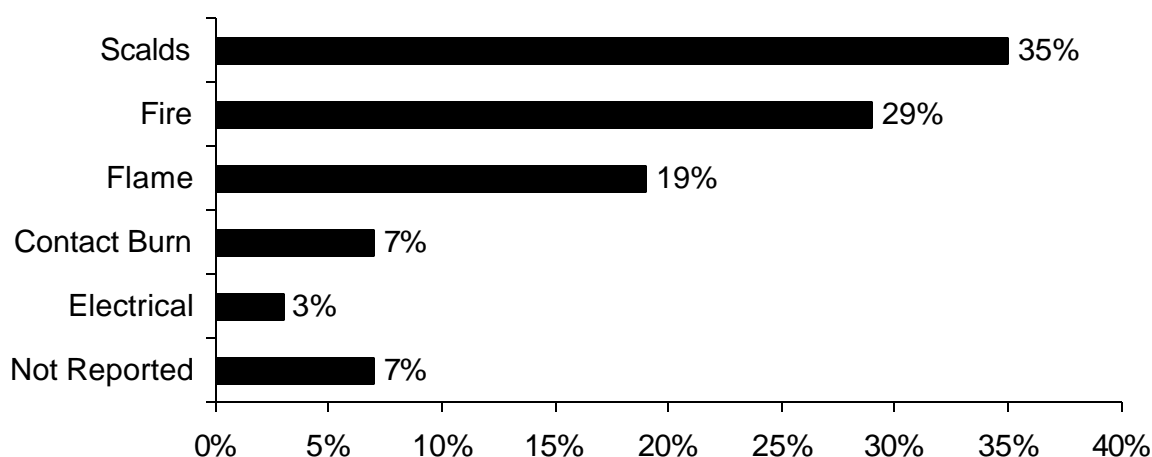
Thirty-five percent (35%) of the burn injuries to people over the age of 65 can be attributed to scalds. These included four scalds from hot tap water, three from hot beverages, two from cooking grease and two scalds from cooking liquids.

Twenty-nine percent (29%) of the burn injuries to these older adults were due to fire. These burn injuries were caused by eight house fires and one brush fire. Smoking caused three of the house fires.

Flame burns were the cause of 19% of injuries to adults over the age of 65. Four were caused by clothing ignitions; one from a gasoline ignition and one was caused by a lighter.

Seven percent (7%) of the victims were burned by contact with hot objects. One of the victims was burned by a toaster and one by a fixed heater. There was also one electrical burn caused by the electrocution of an 83-year old woman. The final 7% represents two victims over the age of 65 whose burns were unclassified.

Leading Causes of Burns to Older Adults (65+)



Work-Related Burn Injuries

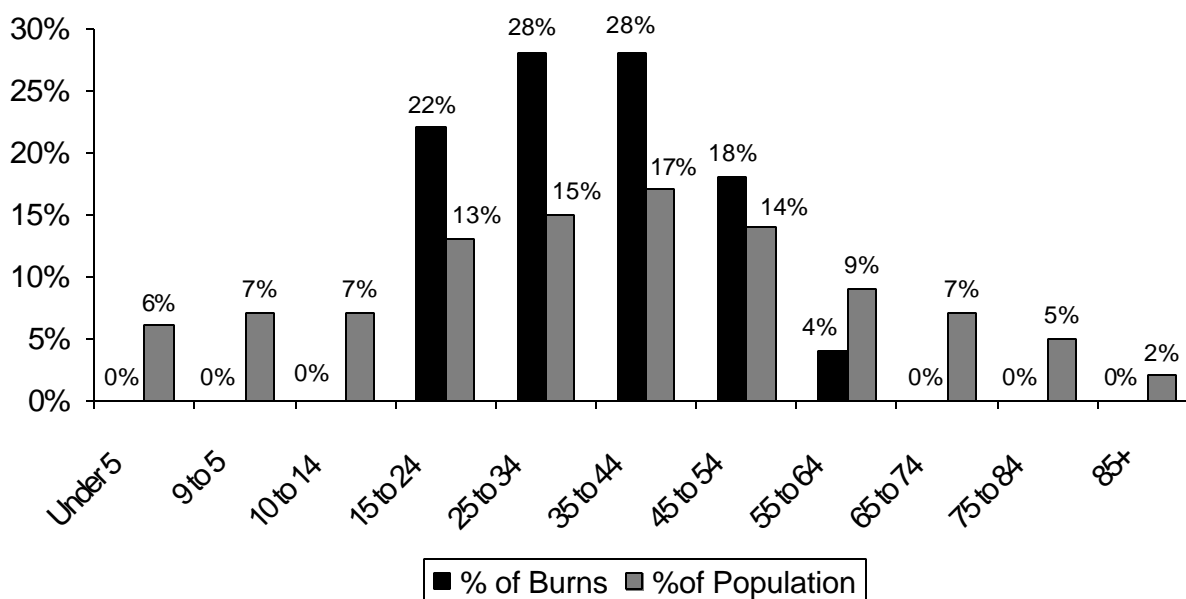
11% of Reported Burns Occurred at Work

Massachusetts hospitals indicated that 50, or 11%, of the 467 burn injuries reported in 2000 occurred while the victim was at work. Men were much more likely to be burned while working than women. Forty-one (41) men, 82%, and nine women, 18%, were burned at work in 2000.

Over 3/4 of Work-Related Burns Incurred by People Between 15 and 44

Twenty-two percent (22%) of the 50 work-related victims where age was known were between 15 and 24 years of age. Twenty-eight percent (28%) of the victims were between 25 and 34 years of age; another 28% belonged to the 35 to 44 age group. Eighteen percent (18%) of work-related burn injuries were victims 45 to 54 years old. The oldest age group to have a work-related burn injury was the 55 to 64 group and they garnered 4% of the burn injuries in the workplace. The youngest person to receive a work-related burn in Massachusetts in 2000 was a 17-year old woman. The oldest victim to receive a work-related burn was a 63-year old man.

Work-Related Burns by Age Group



Over 1/4 of Work-Related Burns Were Scalds

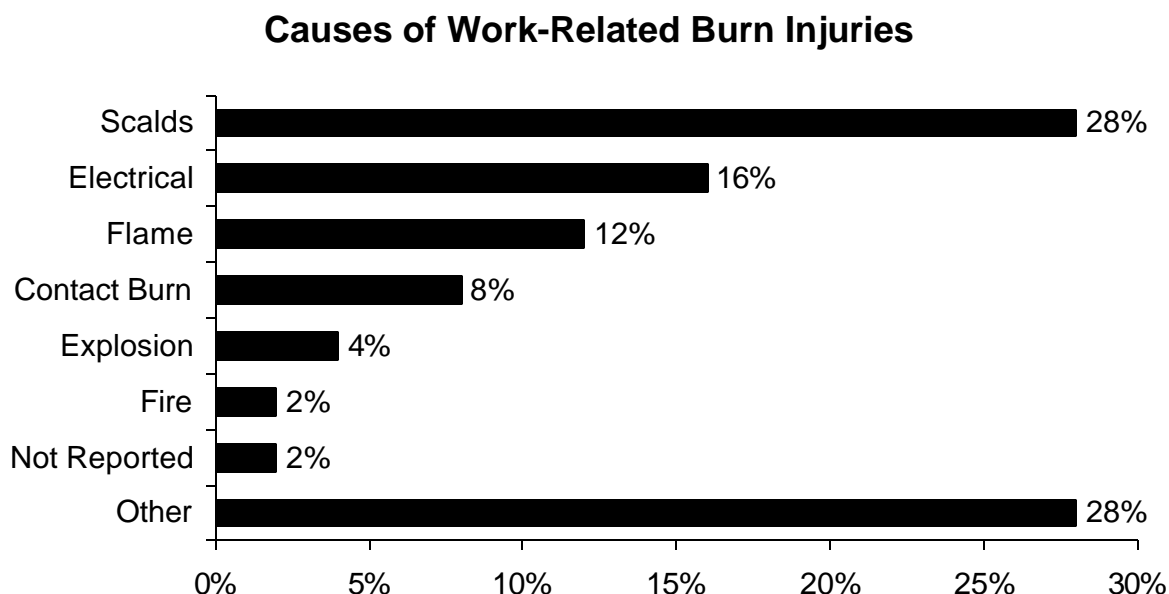
Fourteen (14), or 28%, of the 50 work-related injuries were scalds in 2000, including five from hot cooking grease, three from unspecified cooking activities, two from hot tap water, two from steam, one from a hot beverage and one from some melted material. Workplaces do not share the same restrictions on tap water temperatures that residences do.

Fourteen (14), or another 28%, of work-related injuries were “other” type burns in 2000. Thirteen (13) were chemical burns while one was a flashburn.

Electrical burns caused 16% of work-related burn injuries in 2000. Of these eight, six were from electrocutions, one from a flashburn and one from an unspecified electrical accident.

Flame burns accounted for 12% of these injuries. Two of the injuries were caused by welding, two by gasoline ignitions, one was a clothing ignition and one involved a barbecue grill.

Four contact burns accounted for 8% of work-related injuries. Each of the contact burns was from a different object: an appliance, a portable heater, a machine and an unknown item. There were two explosions, one from natural gas and the other from flammable liquids, causing 4% of these burns. An airplane crash was the only work-related fire that caused any burn injuries in 2000. There was also one reported work-related burn injury of unknown type in 2000.



Burn Injury Reports by Hospital

Fifty (50) acute care health care facilities submitted a total of 483 burn injury reports for 467 victims to the Massachusetts Burn Injury Reporting System (M-BIRS). Some individuals were treated at more than one hospital, resulting in more burn reports than total victims. For information on the number of burn reports submitted by each hospital, please refer to the table *Number of Reported Burn Injuries Per Hospital* in the Appendix.

Law Requires Hospitals to Report Burn Injuries Over 5% of the Body

Massachusetts General Law (MGL) Chapter 112, Section 12A requires all physicians and medical treatment facilities to immediately report treatment of every burn injury extending to 5% or more of a person's body surface area to the State Fire Marshal and to the police department in the community in which the burn occurred. Some hospitals, particularly Lawrence General Hospital and Holy Family in Methuen report all burns, even the ones that do not meet the 5% threshold.

Hospitals May Fax Reports or Call and Submit Written Report

Health care facilities now have a choice about how to report burn injuries. If they choose to do so, health care providers may now fax their burn injury reports to the State Fire Marshal at the Department of Fire Services, (978) 567-3199. A completed transmission will satisfy both the telephone and written notification provisions of the law. Hospitals not opting for the fax report method must report burn injuries by telephone at (800) 475-3443 and submit a written report.

Although M-BIRS was instituted under the Department of Public Safety in June of 1984, Massachusetts hospitals have been required to report burn injuries to a government agency since 1973. M-BIRS, along with the Office of the State Fire Marshal, was carried over to the newly created Department of Fire Services in 1996. It remains a joint program of the Department of Fire Services and the Massachusetts Department of Public Health.

M-BIRS Has Two Main Purposes ³/₄ Identifying Arsonists and Burn Prevention

Data collected by the Massachusetts Burn Injury Reporting System is used in several ways. Investigators use the data to determine if an arsonist was treated for a burn that resulted from an attempt to illegally burn a building or vehicle. If these burns are not reported promptly, arsonists may continue to light fires that threaten life and property. Our data has also been used to identify problems that need to be addressed by public education or regulation and to develop appropriate strategies to deal with these problems. We need to know what type of activity injures whom, if the injuries are seasonal, and how old the victims are, to develop and implement effective prevention programs. We appreciate the efforts of the many dedicated doctors, nurses and clerical personnel who report the burn injuries promptly and completely. They make the program work.

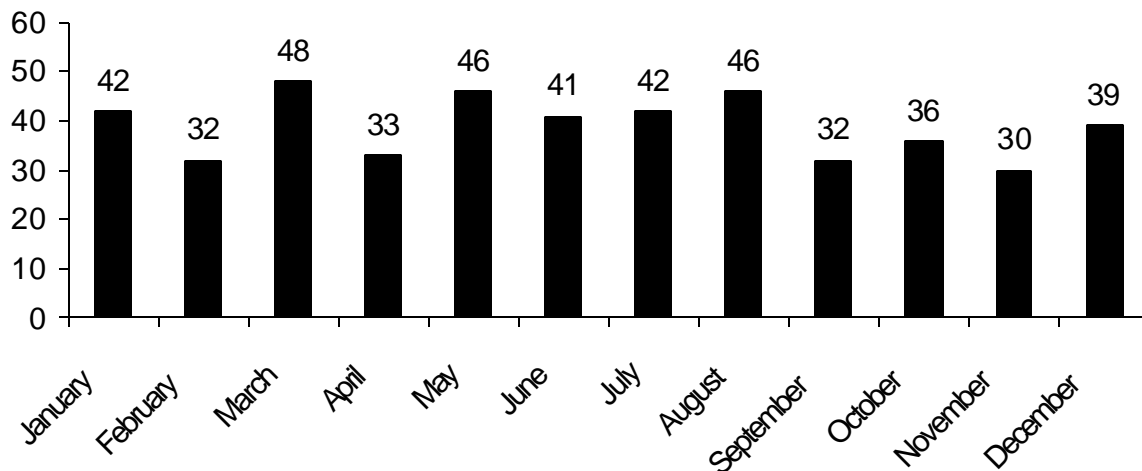
Burn Injuries by Month

Average of 39 Burns a Month

An average of 39 burns was reported during each month of 2000, from a low of 30 in November to a high of 48 in March. This average is up from 38 burns a month in 1999 and 37 burns a month in 1998.

Scalds caused the most burn injuries during every month of the year. Spilled hot beverages, cooking liquids, hot tap water, cooking grease, steam and overheated car radiators cause scalds.

Reported Burn Injuries by Month



For more information, please refer to the table *Causes of Burn Injuries by Month* in the Appendix.

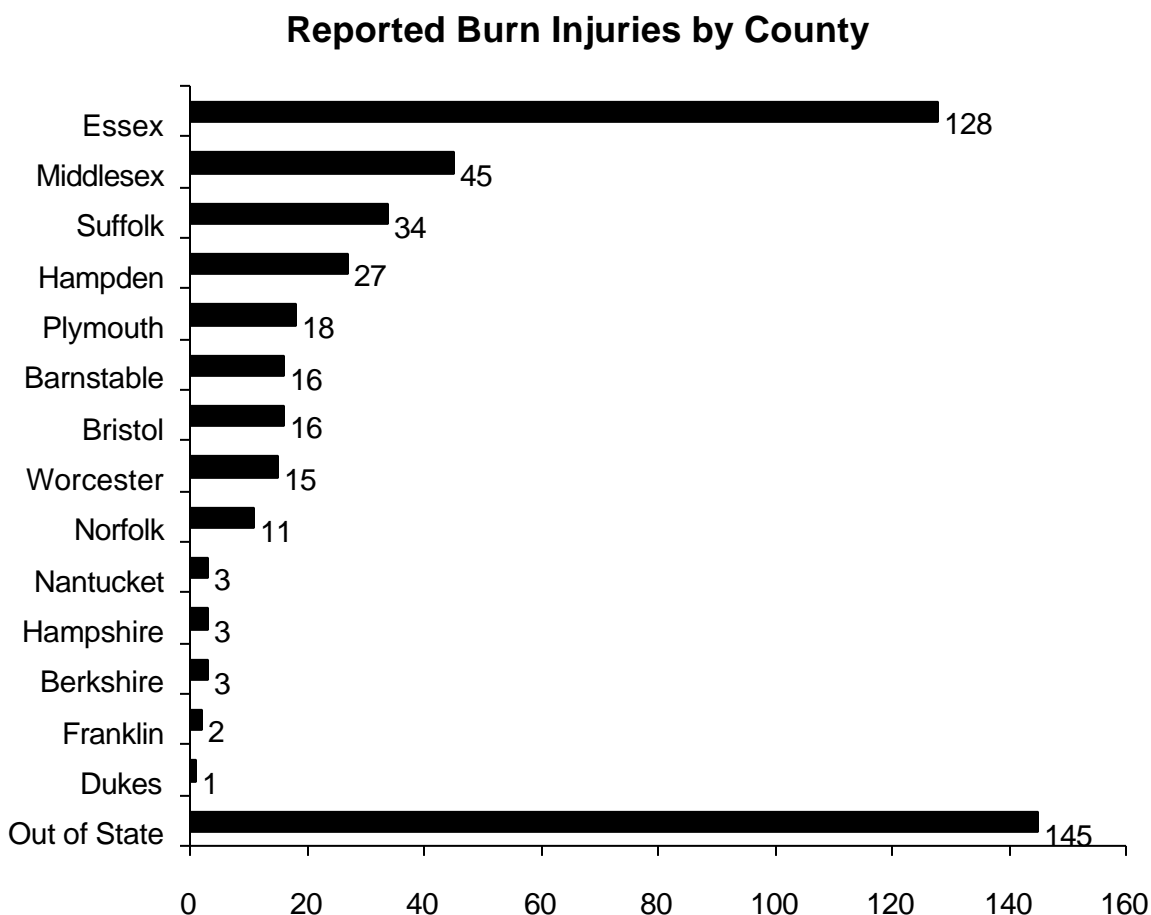
Geographical Demographics

Massachusetts Burn Victims from 106 Cities and Towns

Massachusetts medical facilities treated 322 residents of 106 Massachusetts cities and towns. Burn victims came from every county in the Commonwealth. The largest numbers of reported burn injuries were incurred by residents of Essex, Middlesex and Suffolk counties. Two Essex County hospitals report all of their burns, including those that are less than 5% of the body surface area. This may explain why the numbers for Essex County are so high. It also appears that some large Boston hospitals (Suffolk County) may have under reported the burns they treated.

One hundred and forty-five (145) burn victims from out of state received treatment at Massachusetts facilities. Some of the people were injured while vacationing here; others came to Massachusetts specifically for the specialized treatment of burn injuries that is available in the Commonwealth.

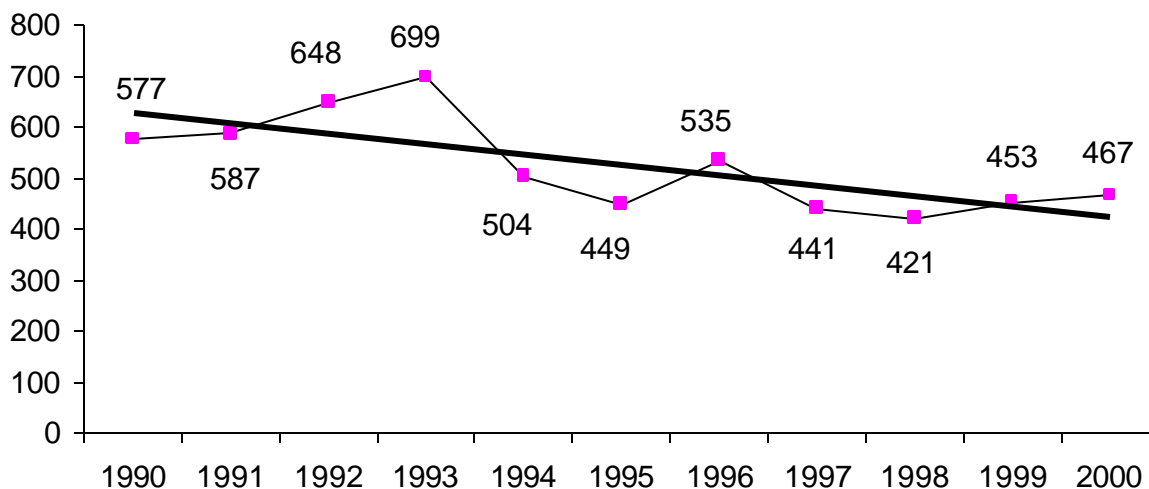
For information on the number of burn victims from each Massachusetts community, please refer to the table *Burn Injuries by Victim's Community* in the Appendix.



10 Year Trends In Burn Injuries

Looking back at the past 10 years, a definite trend is occurring: burn injuries in Massachusetts are declining. There has been a 20% drop in the total number of reported burn injuries from 1990 to 2000. This decline shows us that our data has been used to identify many of the problems that need to be addressed by public education or regulation and that we have developed appropriate strategies to deal with these problems. We have identified many of the problems that result in burn injuries and our analysis indicates that we have been successful in decreasing the number of victims during the past 10 years. We still have much work to do. People need to be educated and reminded about the problems that we have already identified. Young children under the age of five incur the most burn injuries. Scalds are always the leading cause of burn injuries. Year after year hot beverage scalds followed by hot tap water scalds are the leading causes of burn injuries in the Commonwealth. We also need to keep vigilant about identifying new trends and problems that arise from new technologies in these fast moving times.

10 Year History of Total Reported Burns

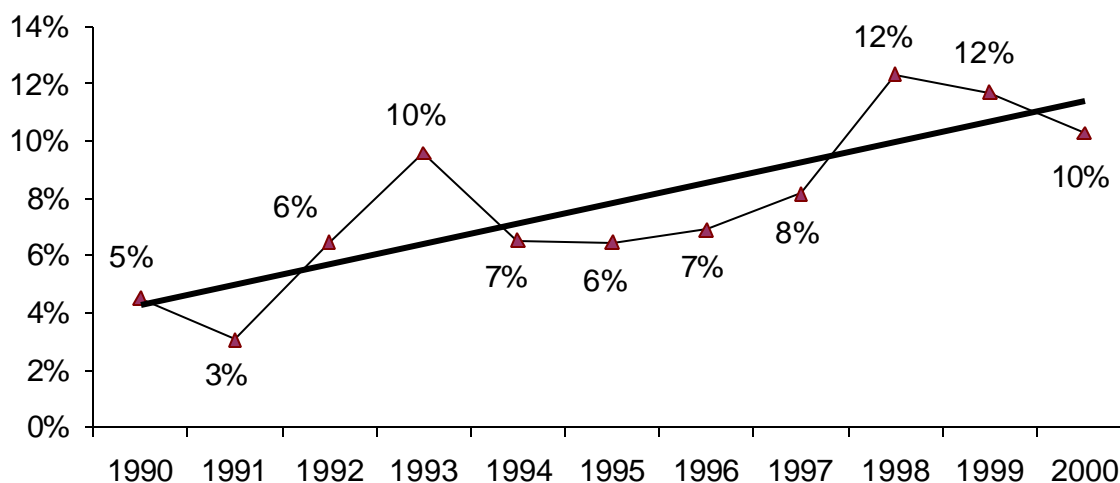


Contact and “Other” Types of Burns Are On the Rise

There is an upward trend for these categories of burns. The increase in “other” types of burns may be seen to be a factor of the ever-growing list of descriptions in the M-BIRS database. As descriptions are added to this list, burns that would have otherwise been listed as the type “not reported” are now grouped in with these other types. “Other” types of burns include but are not limited to: chemical burns, sunburns, assaults, flashburns, and burns from exposure to ultraviolet lamps. These burn injuries also include assaults. In 2000, a new category of burn type was created, *Domestic Violence*. There was one recorded instance of burn injuries received as the result of domestic violence in 2000.

The leading causes of contact burns are the mainstays: irons, cooking activities, appliances and heating units. Children under the age of five are by far the most frequent victims of contact burns. We must continue to educate parents in burn prevention for their young children.

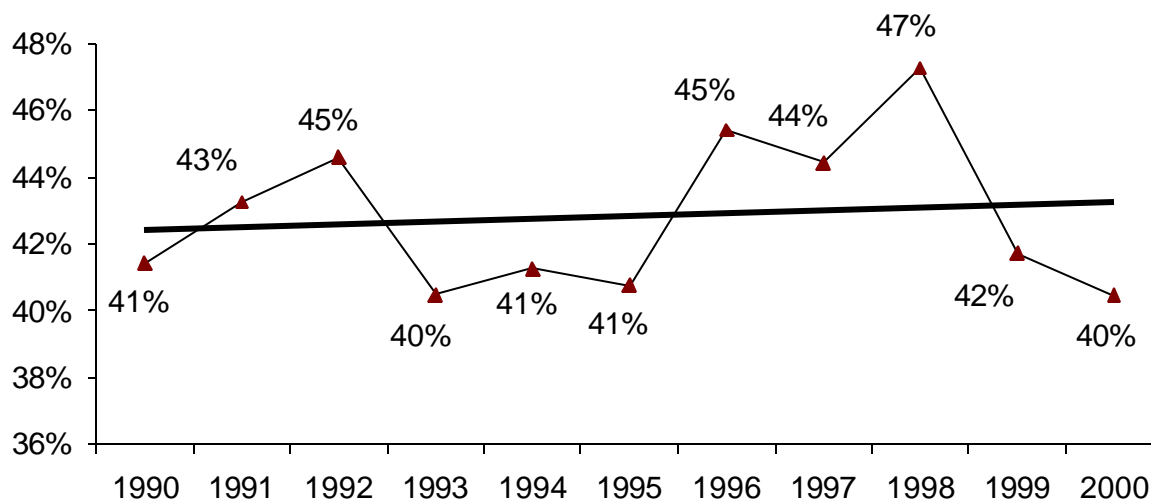
10 Year History of Contact Burns



Trend for Scald Burns Show a Slight Rise

While the total number of scald burns is dropping, the number of total burns is falling at a faster rate. This has led to the percentage of total burns caused by scalds generally increasing. This means that scald burns remain a serious and generally increasing problem in Massachusetts. This small percentage increase of scald burns is most likely due to the small increase in population to the age group of children under the age of five who are the leading victims of scald burns.

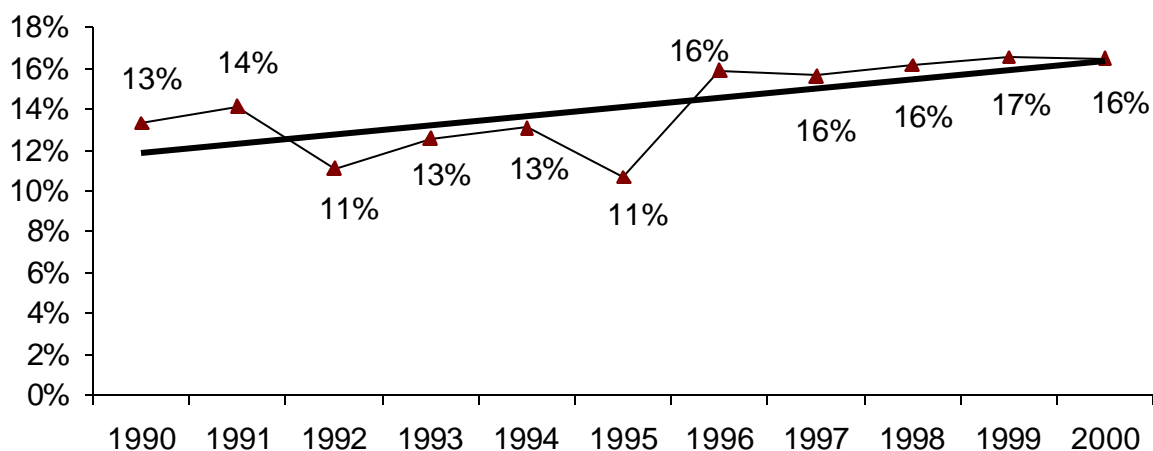
10 Year History of Scald Burns



Flame Burns Show Slight Increase

Although the number of flame burn injuries in 1990 is the same as the number of flame burns in 2000 (77), the trend over the intervening 8 years has been a slight increase. A large number of these victims have been elderly women whose clothing ignited while cooking. This tendency towards growth can be seen in a growing population of elderly women who live at home, often alone. This independence includes a pattern of cooking in clothing with loose-fitting sleeves. These sleeves come into contact with the hot cooking surface, ignite and catch fire. In many cases, the victims are unable to move quickly enough to save themselves.

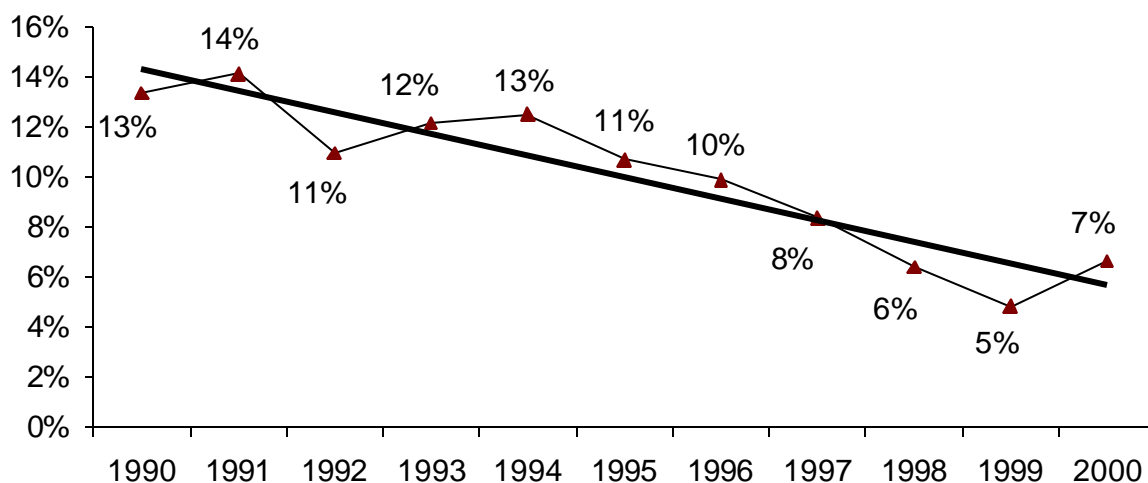
10 Year History of Flame Burns



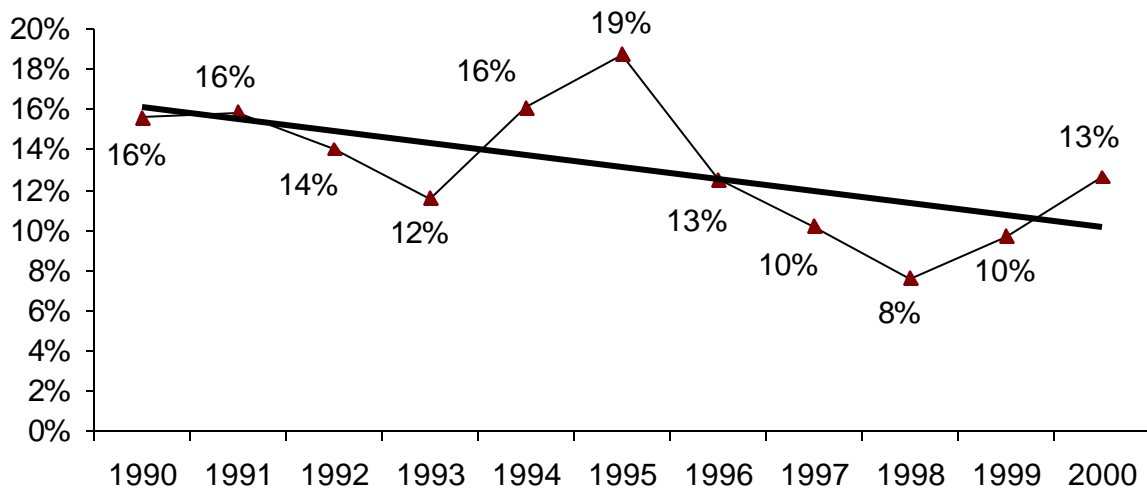
Electrical, Explosion and Fire Related Burns Show a Downward Trend

Three burn types, electrical, explosions, and fire-related, have shown a decreasing tendency since 1990. The declining trends are all less than a one-percent drop per year.

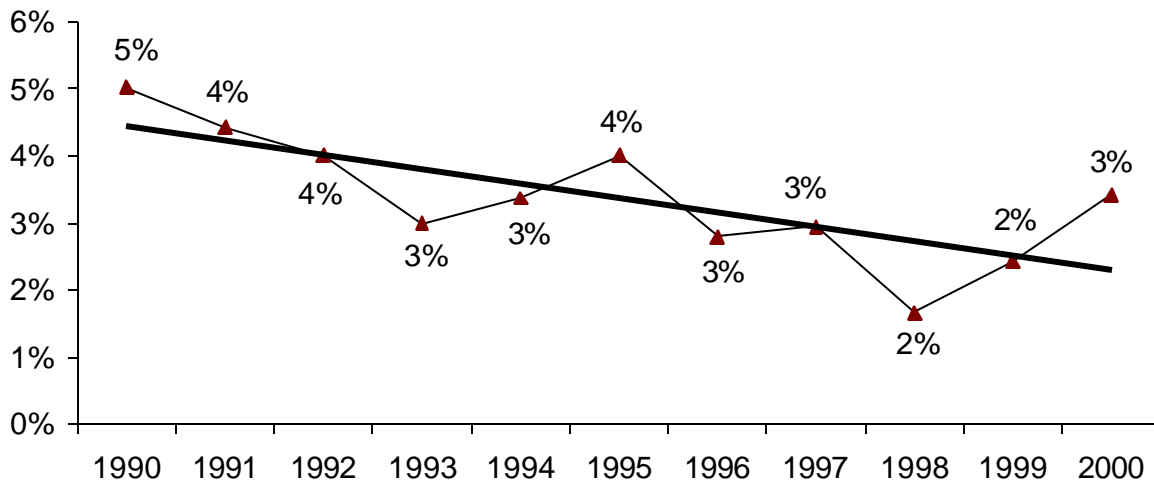
10 Year History of Explosion Related Burns



10 Year History of Fire Related Burns



10 Year History of Electrical Burns



We believe that code enforcement and consistent, sustained public education efforts from the fire service, public health and medical communities have paid off in the fight to reduce the number of victims of burn injuries. A main example of education is the Department of Fire Services' S.A.F.E. Program. Since its inception in 1995, there have been many "Young Heroes" who saved their families, friends and themselves from being burned. Through local fire and school departments children learn how to prepare and educate their family in case of a fire, how to react if they should find themselves in a fire, and how to identify and not play with things that might start a fire.

Through code enforcement, local boards of health have had an impact. Enforced regulations also halt unauthorized and inexperienced people from putting themselves in harm's way. At 155° F it takes only one second to sustain a third degree burn. At 130° F it takes thirty seconds. At 120° F, it can take a full five minutes to sustain a third degree burn. Massachusetts state law requires that the temperature for hot water heaters should be set between 110° and 130° F. It is important for homeowners to make sure their own water heaters are set in the appropriate range.

Since 1990, the number of reported burn injuries in the Commonwealth of Massachusetts has dropped 20% from 577 in 1990 to 467 in 2000. With renewed drive, we hope we can keep this trend moving downward.

2000 Appendix

* Italicized names are sub-categories for the headings listed above them.

2000 Appendix

* Italicized names are sub-categories for the headings listed above them.

Specific Causes of Burn Injuries

Cause	# of Burns	% of Burns	Cause	# of Burns	% of Burns
Scalds	189	40.5%	<i>Self-Immolation</i>	<i>1</i>	<i>0.2%</i>
Hot Beverages	61	13.1%	Brush Fires	8	1.7%
Hot Tap Water	42	9.0%	<i>Brush Fire</i>	<i>3</i>	<i>0.6%</i>
Cooking Liquids	40	8.6%	<i>Natural</i>	<i>2</i>	<i>0.4%</i>
Cooking Grease	24	5.1%	<i>Gasoline</i>	<i>2</i>	<i>0.4%</i>
Steam	6	1.3%	<i>Explosion</i>	<i>1</i>	<i>0.2%</i>
Melted Material	5	1.1%	Camp or Bon Fires	5	1.1%
Radiator	5	1.1%	<i>Gasoline</i>	<i>2</i>	<i>0.4%</i>
Liquid	3	0.6%	<i>Clothing</i>	<i>1</i>	<i>0.2%</i>
Motor Oil	2	0.4%	<i>Ignitable Liquid</i>	<i>1</i>	<i>0.2%</i>
Car Radiator	1	0.2%	<i>Friendly</i>	<i>1</i>	<i>0.2%</i>
Flame Burns	77	16.5%	Motor Vehicle Fires	5	1.1%
Gasoline	16	3.4%	<i>Airplane Crash</i>	<i>1</i>	<i>0.2%</i>
Clothing	8	1.7%	<i>Engine</i>	<i>1</i>	<i>0.2%</i>
Cooking	8	1.7%	<i>Explosion</i>	<i>1</i>	<i>0.2%</i>
Welding	7	1.5%	<i>Motorcycle</i>	<i>1</i>	<i>0.2%</i>
Lighter	6	1.3%	<i>MVA</i>	<i>1</i>	<i>0.2%</i>
Candle	5	1.1%	Firefighter	1	0.2%
Smoking	5	1.1%	Unclassified Fires	1	0.2%
Unknown	5	1.1%	<i>Gasoline</i>	<i>1</i>	<i>0.2%</i>
Ignitable Liquid	3	0.6%	Contact Burns	50	10.7%
Flashburns	3	0.6%	Stove	11	2.4%
Barbecue	2	0.4%	Iron	9	1.9%
Stove	2	0.4%	Barbecue	5	1.1%
Brush/Clothes	1	0.2%	Heater	4	0.9%
Car Part	1	0.2%	Cooking	3	0.6%
Dryer Fire	1	0.2%	Unknown	3	0.6%
Flammables	1	0.2%	Car Part	2	0.4%
Match	1	0.2%	Contact	2	0.4%
Pilot Light	1	0.2%	Electrocution	2	0.4%
Self-Immolation	1	0.2%	Lawnmower	2	0.4%
Fires	59	12.6%	Airbag	1	0.2%
House Fires	40	8.6%	Appliance	1	0.2%
<i>House Fire</i>	<i>22</i>	<i>4.7%</i>	Clothing	1	0.2%
<i>Smoking</i>	<i>7</i>	<i>1.5%</i>	Curling Iron	1	0.2%
<i>Candle</i>	<i>4</i>	<i>0.9%</i>	Lamp	1	0.2%
<i>Heat/Spark</i>	<i>2</i>	<i>0.4%</i>			
<i>Combustible/Heater</i>	<i>1</i>	<i>0.2%</i>			
<i>Clothing</i>	<i>1</i>	<i>0.2%</i>			
<i>Child/Lighter</i>	<i>1</i>	<i>0.2%</i>			

Cause	# of Burns	% of Burns
Machine	1	0.2%
Pipe	1	0.2%
Other Burn Injuries	36	7.7%
Chemical	30	6.4%
Sunburn	4	0.9%
Assault	1	0.2%
Flashburn	1	0.2%
Explosion	31	6.6%
Fireworks	10	2.1%
Gasoline	3	0.6%
Propane	3	0.6%
Unknown	3	0.6%
Explosion	2	0.4%
Aerosol	1	0.2%
Barbecue	1	0.2%
Bonfire	1	0.2%
Chemical	1	0.2%
Ignitable Liquid	1	0.2%
Flammables	1	0.2%
Lawnmower	1	0.2%
Model Rocket	1	0.2%
Natural Gas	1	0.2%
Tar	1	0.2%

Cause	# of Burns	% of Burns
Electrical	14	3.0%
Electrocution	10	2.1%
Electrical	2	0.4%
Explosion	1	0.2%
Flashburn	1	0.2%
Unclassified Burns	10	6.0%
Self-Immolation	1	0.6%
Unknown	9	5.4%
Domestic Violence	1	0.2%

Causes of Burn Injuries by Age

UNDER 5	114	24.4%
Cause	# of Burns	% By Age
Scalds	77	67.5%
Beverages	39	34.2%
Tap Water	17	14.9%
Cooking Liquids	13	14.0%
Cooking Grease	3	2.6%
Microwave Liquids	3	2.6%
Car Radiator	1	0.9%
Melted	1	0.9%
Contact	19	16.7%
Iron	8	7.0%
Stove	6	5.3%
Lawnmower	2	1.8%
Woodstove	1	0.9%
Lamp	1	0.9%
Heater	1	0.9%
Unspecified Cooking	1	0.9%
Fire	7	6.1%
House Fires	5	4.4%
<i>House Fires</i>	3	2.6%
<i>Lighter</i>	1	0.9%
<i>Candle</i>	1	0.9%
Brush Fires	1	0.9%
<i>Natural</i>	1	0.9%
Camp or Bonfires	1	0.9%
<i>Gasoline</i>	1	0.9%
Flame	5	4.4%
Candle/Clothing	1	0.9%
Dryer Fire	1	0.9%
Flashburn	1	0.9%
Gasoline	1	0.9%
Child/Lighter	1	0.9%
Other	3	2.6%
Sunburn	2	1.8%
Chemical	1	0.9%
Explosion	2	1.8%
Fireworks	2	1.8%

AGES 5 TO 9	34	7.3%
Cause	# of Burns	% By Age
Scalds	16	47.1%
Beverages	8	23.5%
Cooking Liquids	3	8.8%
Tap Water	2	5.9%
Melted	1	2.9%
Flame	6	17.6%
Clothing	4	11.8%
Gasoline	1	2.9%
Child/Lighter	1	2.9%
Fires	6	17.6%
House Fires	5	14.7%
<i>House Fires</i>	3	8.8%
<i>Candle</i>	2	5.9%
Fire/Not Specified	1	2.9%
<i>Gasoline</i>	1	2.9%
Contact	4	11.8%
Iron	2	5.9%
Barbecue	1	2.9%
Stove	1	2.9%
Explosion	1	2.9%
Propane	1	2.9%
Not Reported	1	2.9%

AGES 10 TO 14	32	6.9%
Cause	# of Burns	% By Age
Flame	10	31.3%
Gasoline	7	21.9%
Clothing	1	3.1%
Ignitable Liquid	1	3.1%
Child/Lighter	1	3.1%
Explosion	6	18.8%
Fireworks	3	9.4%
Unspecified	3	9.4%
Scalds	5	15.6%
Tap Water	2	6.3%
Radiator	1	3.1%
Steam	1	3.1%
Cooking Liquids	1	3.1%
Fire	5	15.6%
House Fires	2	6.3%
<i>Candle</i>	<i>1</i>	<i>3.1%</i>
<i>House Fires</i>	<i>1</i>	<i>3.1%</i>
Camp or Bonfires	2	6.3%
<i>Gasoline</i>	<i>1</i>	<i>3.1%</i>
<i>Ignitable Liquid</i>	<i>1</i>	<i>3.1%</i>
Brush Fire	1	3.1%
<i>Gasoline</i>	<i>1</i>	<i>3.1%</i>
Electrical	3	9.4%
Electrocution	3	9.4%
Contact	2	6.3%
Barbecue	1	3.1%
Unspecified	1	3.1%
Other	1	3.1%
Chemical	1	3.1%

AGES 15 TO 24	72	15.4%
Cause	# of Burns	% By Age
Scalds	26	36.1%
Cooking Grease	9	12.5%
Cooking Liquids	8	11.1%
Tap Water	5	6.9%
Beverages	2	2.8%
Melted	1	1.4%
Steam	1	1.4%
Flame	18	25.0%
Gasoline	3	4.2%
Barbecue	2	2.8%
Candles	2	2.8%
Clothing	2	2.8%
Welding	2	2.8%
Flashburn	1	1.4%
Lighter	1	1.4%
Matches	1	1.4%
Unspecified	3	4.2%
Other	7	9.7%
Chemical	6	8.3%
Sunburn	1	1.4%
Contact	5	6.9%
Airbag	1	1.4%
Car Part	1	1.4%
Cooking	1	1.4%
Machine	1	1.4%
Stove	1	1.4%
Explosion	5	6.9%
Fireworks	2	2.8%
Propane	2	2.8%
Barbecue	1	1.4%
Electrical	4	5.6%
Electrocution	3	4.2%
Explosion	1	1.4%
Self-immolation	1	1.4%

AGES 25 TO 34	53	11.3%
Cause	# of Burns	% By Age
Scalds	15	28.3%
Cooking Grease	4	7.5%
Cooking Liquids	4	7.5%
Tap Water	3	5.7%
Beverages	2	3.8%
Car Radiator	1	1.9%
Melted	1	1.9%
Other	10	18.9%
Chemical	8	15.1%
Assault	1	1.9%
Sunburn	1	1.9%
Explosions	9	17.0%
Gasoline	3	5.7%
Fireworks	2	3.8%
Flammables	1	1.9%
Lawnmower	1	1.9%
Natural Gas	1	1.9%
Tar	1	1.9%

Cause	# of Burns	% By Age
Flame	7	13.2%
Gasoline	2	3.8%
Welding	2	3.8%
Clothing	1	1.9%
Cook/Clothes Ignited	1	1.9%
Pilot Light	1	1.9%
Fire	5	9.4%
House Fires	2	3.8%
<i>House Fires</i>	2	3.8%
Brush Fire	1	1.9%
<i>Brush Fire</i>	1	1.9%
Camp or Bonfire	1	1.9%
<i>Friendly</i>	1	1.9%
Firefighter	1	1.9%
Contact	4	7.5%
Barbecue	2	3.8%
Appliance	1	1.9%
Car Part	1	1.9%
Electrical	1	1.9%
Unspecified	1	1.9%
Not Reported	2	3.8%

AGES 35 TO 44 62 13.3%

Cause	# of Burns	% By Age
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Scalds	18	29.0%
Tap Water	5	8.1%
Cooking Liquids	4	6.5%
Steam	3	4.8%
Cooking Grease	2	3.2%
Beverage	1	1.6%
Melted	1	1.6%
Motor Oil	1	1.6%

Flame 12 19.4%

Smoking	2	3.2%
Welding	2	3.2%
Car Part	1	1.6%
Clothing	1	1.6%
Cooking	1	1.6%
Flashburn	1	1.6%
Gasoline	1	1.6%
Ignitable Liquid	1	1.6%
Lighter	1	1.6%
Stove	1	1.6%

Fire 9 14.5%

House Fires	4	6.5%
<i>House Fires</i>	2	3.2%
<i>Cooking</i>	1	1.6%
<i>Smoking</i>	1	1.6%
Brush Fires	3	4.8%
<i>Explosion</i>	1	1.6%
<i>Gasoline</i>	1	1.6%
<i>Brush Fire</i>	1	1.6%
Vehicle Fires	2	3.2%
<i>Airplane Crash</i>	1	1.6%
<i>Engine</i>	1	1.6%

Cause	# of Burns	% By Age
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Contact	5	8.1%
Heater	1	1.6%
Stove	1	1.6%
Pipe	1	1.6%
Barbecue	1	1.6%
Unspecified	1	1.6%

Other (Chemical) 6 9.7%**Explosions 6 9.7%**

Fireplace	1	1.6%
Fireworks	1	1.6%
Bonfire	1	1.6%
Chemical	1	1.6%
Ignitable Liquid	1	1.6%
Unspecified	1	1.6%

Electrical 4 6.5%

Electrocution	3	4.8%
Unspecified	1	1.6%

Domestic Violence 1 1.6%**Not Reported 1 1.6%**

AGES 45 TO 54	50	10.7%
Cause	# of Burns	% By Age
Scalds	15	30.0%
Beverages	5	10.0%
Tap Water	3	6.0%
Cooking Liquids	3	6.0%
Cooking Grease	1	2.0%
Motor Oil	1	2.0%
Radiator	1	2.0%
Steam	1	2.0%
Fire	9	18.0%
House Fires	7	14.0%
<i>House Fires</i>	<i>4</i>	<i>8.0%</i>
<i>Smoking</i>	<i>2</i>	<i>4.0%</i>
<i>Self-Immolation</i>	<i>1</i>	<i>2.0%</i>
Vehicle Fires	1	2.0%
<i>Motorcycle</i>	<i>1</i>	<i>2.0%</i>
Camp or Bonfires	1	2.0%
<i>Clothing</i>	<i>1</i>	<i>2.0%</i>
Flame	8	16.0%
Unspecified	2	4.0%
Clothing	1	2.0%
Cooking	1	2.0%
Hot Object	1	2.0%
Smoking	1	2.0%
Stove	1	2.0%
Welding	1	2.0%
Other	5	10.0%
Chemical	4	8.0%
Flashburn	1	2.0%
Contact	5	10.0%
Curling Iron	1	2.0%
Wood Stove	1	2.0%
Portable Heater	1	2.0%
Machine	1	2.0%
Unspecified	1	2.0%
Electrical	3	6.0%
Electrocutions	2	4.0%
Flashburn	1	2.0%
Explosions	1	2.0%
Model Rocket	1	2.0%
Not Reported	3	6.0%

AGES 55 TO 64	19	4.1%
Cause	# of Burns	% By Age
Scalds	6	31.6%
Radiator	2	10.5%
Beverage	1	5.3%
Cooking Grease	1	5.3%
Tap Water	1	5.3%
Unspecified	1	5.3%
Flame	5	26.3%
Smoking on Oxygen	2	10.5%
Ignitable Liquid	1	5.3%
Candle	1	5.3%
Cook/Clothes Ignited	1	5.3%
Other	4	21.1%
Chemical	4	21.1%
Fires	3	15.8%
House Fires	2	10.5%
<i>Smoking</i>	<i>1</i>	<i>5.3%</i>
<i>Heat/Spark</i>	<i>1</i>	<i>5.3%</i>
Brush Fires	1	5.3%
<i>Brush Fire</i>	<i>1</i>	<i>5.3%</i>
Contact	1	5.3%
Cooking	1	5.3%

AGES 65 TO 74	13	2.8%
Cause	# of Burns	% By Age
Scalds	5	38.5%
Cooking Grease	2	15.4%
Beverage	1	7.7%
Cooking Liquids	1	7.7%
Tap Water	1	7.7%
Flame	3	23.1%
Clothing	1	7.7%
Cook/Clothes Ignited	1	7.7%
Gasoline	1	7.7%
Fire	3	23.1%
House Fires	3	23.1%
<i>Heat/Spark</i>	<i>1</i>	<i>7.7%</i>
<i>Smoking on Oxygen</i>	<i>1</i>	<i>7.7%</i>
<i>Unspecified</i>	<i>1</i>	<i>7.7%</i>
Contact	2	15.4%
Fixed Heater	1	7.7%
Toaster	1	7.7%

AGES 85+	5	1.1%
Cause	# of Burns	% By Age
Fire	4	80.0%
House Fires	3	60.0%
<i>Smoking</i>	<i>2</i>	<i>40.0%</i>
<i>House Fire</i>	<i>1</i>	<i>20.0%</i>
Brush Fires	1	20.0%
<i>Natural</i>	<i>1</i>	<i>20.0%</i>
Scalds	1	20.0%
Beverage	1	20.0%

AGES 75 TO 84	13	2.8%
Cause	# of Burns	% By Age
Scalds	5	38.5%
Tap Water	3	23.1%
Beverage	1	7.7%
Cooking Liquids	1	7.7%
Flame	3	23.1%
Candle/Clothing Ignit.	1	7.7%
Cook/Clothes Ignited	1	7.7%
Lighter	1	7.7%
Fire	2	15.4%
House Fires	2	15.4%
<i>House Fires</i>	<i>2</i>	<i>15.4%</i>
Electrical	1	7.7%
Electrocution	1	7.7%
Not Reported	2	15.4%

Causes of Burn Injuries by Month

JANUARY	42	9.0%
Cause	#Of Burns	% By Month
Fire	12	28.6%
House Fires	9	21.4%
Unspecified	6	14.3%
Comb. Near Heater	1	2.4%
Child/Lighter	1	2.4%
Self-Immolation	1	2.4%
Smoking	1	2.4%
Camp or Bonfire	1	2.4%
Clothing	1	2.4%
Firefighter	1	2.4%
Scalds	11	26.2%
Tap Water	4	9.5%
Cooking Liquids	4	9.5%
Beverage	3	7.1%
Flame	7	16.7%
Candle/Clothing Ignit.	2	4.8%
Clothing	1	2.4%
Cook/Clothes Ignited	1	2.4%
Gasoline	1	2.4%
Pilot Light	1	2.4%
Smoking	1	2.4%
Contact	6	14.3%
Cooking	2	4.8%
Fixed Heater	1	2.4%
Iron	1	2.4%
Stove	1	2.4%
Unspecified	1	2.4%
Explosion	2	4.8%
Natural Gas	1	2.4%
Unspecified	1	2.4%
Other (Chemical)	2	4.8%
Domestic Violence	1	2.4%
Not Reported	1	2.4%

FEBRUARY	32	6.9%
Cause	#Of Burns	% By Month
Scalds	20	62.5%
Beverages	7	21.9%
Tap Water	6	18.8%
Cooking Liquids	4	12.5%
Radiator	2	6.3%
Steam	1	3.1%
Flame	5	15.6%
Welding	2	6.3%
Cooking	1	3.1%
Flashburn	1	3.1%
Unspecified	1	3.1%
Explosion	2	6.3%
Fireworks	1	3.1%
Unspecified	1	3.1%
Contact	2	6.3%
Stove	1	3.1%
Woodstove	1	3.1%
Other (Chemical)	2	6.3%
Fire	1	3.1%
House Fires	1	3.1%
Unspecified	1	3.1%

MARCH	48	10.3%
Cause	#Of Burns	% By Month
Scalds	20	41.7%
Tap Water	8	16.7%
Beverages	4	8.3%
Cooking Liquids	3	6.3%
Cooking Grease	3	6.3%
Motor Oil	1	2.1%
Steam	1	2.1%
Flame	8	16.7%
Child/Gasoline	2	4.2%
Brush/Clothes Ignited	1	2.1%
Child/Lighter/Clothing	1	2.1%
Flashburn	1	2.1%
Gasoline	1	2.1%
Lighter	1	2.1%
Stove	1	2.1%
Fire	7	14.6%
House Fires	5	10.4%
<i>House Fires</i>	4	8.3%
<i>Smoking</i>	1	2.1%
Vehicle Fires	1	2.1%
<i>Motorcycle</i>	1	2.1%
Brush Fires	1	2.1%
<i>Natural</i>	1	2.1%
Contact	4	8.3%
Curling Iron	1	2.1%
Heater	1	2.1%
Iron	1	2.1%
Unspecified	1	2.1%
Other	4	8.3%
Chemical	3	6.3%
Sunburn	1	2.1%
Explosion	3	6.3%
Fireworks	2	4.2%
Propane	1	2.1%

APRIL	33	7.1%
Cause	#Of Burns	% By Month
Scalds	14	42.4%
Beverages	6	18.2%
Cooking Liquids	4	12.1%
Tap	2	6.1%
Cooking Grease	1	3.0%
Microwave Liquid	1	3.0%
Flame	5	15.2%
Candle	1	3.0%
Cook/Clothes Ignited	1	3.0%
Flashburn	1	3.0%
Gasoline	1	3.0%
Smoking on Oxygen	1	3.0%
Fire	4	12.1%
House Fires	2	6.1%
<i>House Fires</i>	2	6.1%
Brush Fires	2	6.1%
<i>Brush Fires</i>	2	6.1%
Electrical	3	9.1%
Electrocution	2	6.1%
Explosion	1	3.0%
Other (Chemical)	3	9.1%
Contact	2	6.1%
Cooking	1	3.0%
Lamp	1	3.0%
Explosion	1	3.0%
Model Rocket	1	3.0%
Not Reported	1	3.0%
Self-Immolation	1	3.0%

MAY	46	9.9%
Cause	#Of Burns	% By Month
Scalds	18	39.1%
Beverages	8	17.4%
Tap Water	5	10.9%
Cooking Liquids	2	4.3%
Cooking Grease	1	2.2%
Motor Oil	1	2.2%
Steam	1	2.2%
Flame	10	21.7%
Cook/Clothes Ignited	2	4.3%
Ignitable Liquid	2	4.3%
Welding	2	4.3%
Gasoline	1	2.2%
Lighter	1	2.2%
Child/Lighter	1	2.2%
Smoking on Oxygen	1	2.2%
Fire	7	15.2%
Brush Fires	3	6.5%
<i>Explosion</i>	<i>1</i>	<i>2.2%</i>
<i>Gasoline</i>	<i>1</i>	<i>2.2%</i>
<i>Brush Fire</i>	<i>1</i>	<i>2.2%</i>
House Fires	2	4.3%
<i>House Fires</i>	<i>2</i>	<i>4.3%</i>
Camp or Bonfires	1	2.2%
<i>Gasoline</i>	<i>1</i>	<i>2.2%</i>
Fire Not Specified	1	2.2%
<i>Gasoline</i>	<i>1</i>	<i>2.2%</i>
Contact	6	13.0%
Barbecue	2	4.3%
Airbag	1	2.2%
Clothing	1	2.2%
Pipe	1	2.2%
Unspecified	1	2.2%
Electrical	2	4.3%
Electrocution	1	2.2%
Flashburn	1	2.2%
Explosion	1	2.2%
Fireworks	1	2.2%
Other (Sunburn)	1	2.2%
Not Reported	1	2.2%

JUNE	41	8.8%
Cause	#Of Burns	% By Month
Scalds	14	34.1%
Beverages	4	9.8%
Tap Water	4	9.8%
Cooking Liquids	3	7.3%
Cooking Grease	2	4.9%
Radiator	1	2.4%
Flame	7	17.1%
Barbecue/Gas Grill	1	2.4%
Cooking	1	2.4%
Dryer Fire	1	2.4%
Ignitable Liquid	1	2.4%
Gasoline	1	2.4%
Play/Lighter	1	2.4%
Welding	1	2.4%
Contact	6	14.6%
Iron	2	4.9%
Barbecue	1	2.4%
Lawnmower	1	2.4%
Machine	1	2.4%
Toaster	1	2.4%
Other	4	9.8%
Chemical	3	7.3%
Sunburn	1	2.4%
Explosion	3	7.3%
Barbecue/Gas Grill	1	2.4%
Bonfire	1	2.4%
Fireworks	1	2.4%
Fire	3	7.3%
House Fires	3	7.3%
<i>Smoking</i>	<i>1</i>	<i>2.4%</i>
<i>House Fire</i>	<i>2</i>	<i>4.9%</i>
Electrical	2	4.9%
Electrocution	2	4.9%
Not Reported	2	4.9%

JULY	42	9.0%
Cause	#Of Burns	% By Month
Scalds	16	38.1%
Beverages	6	14.3%
Cooking Liquids	3	7.1%
Tap Water	3	7.1%
Cooking Grease	1	2.4%
Melted	1	2.4%
Radiator	1	2.4%
Steam	1	2.4%
Explosion	8	19.0%
Fireworks	5	11.9%
Ignitable Liquid	1	2.4%
Lawnmower	1	2.4%
Unspecified	1	2.4%
Contact	5	11.9%
Barbecue	2	4.8%
Car Part	1	2.4%
Iron	1	2.4%
Unspecified	1	2.4%
Flame	4	9.5%
Clothing	1	2.4%
Cook/Clothing	1	2.4%
Gasoline	1	2.4%
Unspecified	1	2.4%
Fire	4	9.5%
Camp or Bonfires	2	4.8%
<i>Ignitable Liquid</i>	<i>1</i>	<i>2.4%</i>
<i>Friendly</i>	<i>1</i>	<i>2.4%</i>
House Fires	1	2.4%
<i>House Fire</i>	<i>1</i>	<i>2.4%</i>
Vehicle Fires	1	2.4%
<i>Engine</i>	<i>1</i>	<i>2.4%</i>
Other	3	7.1%
Chemical	2	4.8%
Sunburn	1	2.4%
Electrical	1	2.4%
Electrocution	1	2.4%
Not Reported	1	2.4%

AUGUST	46	9.9%
Cause	#Of Burns	% By Month
Scalds	20	43.5%
Beverages	5	10.9%
Cooking Liquids	5	10.9%
Cooking Grease	4	8.7%
Melted	3	6.5%
Tap Water	2	4.3%
Radiator	1	2.2%
Flame	8	17.4%
Clothing	2	4.3%
Gasoline	2	4.3%
Lighter	1	2.2%
Self-Immolation	1	2.2%
Unspecified	2	4.3%
Contact	7	15.2%
Stove	3	6.5%
Iron	2	4.3%
Appliance	1	2.2%
Car Part	1	2.2%
Other	5	10.9%
Chemical	4	8.7%
Flashburn	1	2.2%
Fire	3	6.5%
Camp or Bonfires	2	4.3%
<i>Gasoline</i>	<i>1</i>	<i>2.2%</i>
<i>Unspecified</i>	<i>1</i>	<i>2.2%</i>
Vehicle	1	2.2%
<i>Explosion</i>	<i>1</i>	<i>2.2%</i>
Explosion	2	4.3%
Gasoline	2	4.3%
Electrical	1	2.2%
Electrocution	1	2.2%

SEPTEMBER	32	6.9%
Cause	#Of Burns	% By Month
Scalds	11	34.4%
Cooking Grease	5	15.6%
Tap Water	3	9.4%
Beverage	1	3.1%
Car Radiator	1	3.1%
Steam	1	3.1%
Flame	6	18.8%
Clothing	1	3.1%
Gasoline	1	3.1%
Lighter	1	3.1%
Smoking	1	3.1%
Welding	1	3.1%
Unspecified	1	3.1%
Other	5	15.6%
Chemical	5	15.6%
Electrical	4	12.5%
Electrocution	4	12.5%
Contact	3	9.4%
Heater	1	3.1%
Iron	1	3.1%
Lawnmower	1	3.1%
Explosion	2	6.3%
Chemical	1	3.1%
Tar	1	3.1%
Fire	1	3.1%
House Fire	1	3.1%
<i>Smoking</i>	<i>1</i>	<i>3.1%</i>

OCTOBER	36	7.7%
Cause	#Of Burns	% By Month
Scalds	13	36.1%
Beverages	5	13.9%
Cooking Liquids	5	13.9%
Cooking Grease	2	5.6%
Steam	1	2.8%
Fire	10	27.8%
House Fires	8	22.2%
<i>Candle</i>	<i>4</i>	<i>11.1%</i>
<i>Cooking</i>	<i>1</i>	<i>2.8%</i>
<i>House Fire</i>	<i>3</i>	<i>8.3%</i>
Brush Fires	2	5.6%
<i>Gasoline</i>	<i>1</i>	<i>2.8%</i>
<i>Natural</i>	<i>1</i>	<i>2.8%</i>
Flame	7	19.4%
Barbecue	1	2.8%
Car Part	1	2.8%
Clothing Ignited	1	2.8%
Cook/Clothes Ignited	1	2.8%
Gasoline	1	2.8%
Stove	1	2.8%
Welding	1	2.8%
Contact	2	5.6%
Iron	1	2.8%
Unspecified	1	2.8%
Other	2	5.6%
Assault	1	2.8%
Chemical	1	2.8%
Explosion	1	2.8%
Propane	1	2.8%
Electrical	1	2.8%
Electrocution	1	2.8%

NOVEMBER	30	6.4%
Cause	#Of Burns	% By Month
Scalds	15	50.0%
Cooking Liquids	5	16.7%
Beverages	3	10.0%
Cooking Grease	3	10.0%
Tap Water	3	10.0%
Melted	1	3.3%
Flame	6	1.3%
Gasoline	4	0.9%
Flammables	1	0.2%
Matches	1	0.2%
Fire	4	13.3%
House Fires	3	10.0%
<i>Smoking</i>	2	6.7%
<i>Smoking on Oxygen</i>	1	3.3%
Vehicle Fires	1	3.3%
<i>MVA</i>	1	3.3%
Contact	3	10.0%
Stove	3	10.0%
Explosion	1	3.3%
Flammables	1	3.3%
Other	1	3.3%
Chemical	1	3.3%

DECEMBER	39	8.4%
Cause	#Of Burns	% By Month
Scalds	17	43.6%
Beverages	9	23.1%
Cooking Liquids	2	5.1%
Cooking Grease	2	5.1%
Microwave Liquid	2	5.1%
Tap Water	2	5.1%
Fire	8	20.5%
House Fires	7	17.9%
<i>House Fires</i>	5	12.8%
<i>Heat/Spark</i>	2	5.1%
Vehicle Fire	1	2.6%
<i>Airplane Crash</i>	1	2.6%
Flame	4	10.3%
Candle	2	5.1%
Clothing Ignited	1	2.6%
Smoking	1	2.6%
Explosion	4	10.3%
Aerosol	1	2.6%
Gasoline	1	2.6%
Propane	1	2.6%
Unspecified	1	2.6%
Other	4	10.3%
Chemical	4	10.3%
Contact	2	5.1%
Portable Heater	1	2.6%
Stove	1	2.6%

Number of Reported Burns Per Hospital

Addison Gilbert Hospital	1	Marlboro Hospital	1
Anna Jaques Hospital	1	Martha's Vineyard Hospital	1
Athol Memorial Hospital	3	Mary Lane Hospital	2
Baystate Medical Center	24	Massachusetts General Hospital	55
Berkshire Medical Center	3	Mercy Hospital	1
Beverly Hospital	4	Metro West Hospital	1
Blackstone Valley Hospital	1	Milford-Whitinsville Hospital	2
Boston Medical Center	2	Morton Hospital	2
Brigham & Women's Hospital	22	Mount Auburn Hospital	2
Cape Cod Hospital	5	Nantucket Cottage Hospital	4
Chelsea Mass General Hospital Unit	1	New England Medical Center	1
Children's Hospital	3	Newton-Wellesley Hospital	3
Clinton Hospital	1	North Adams Regional Hospital	1
Cooley Dickinson Hospital	1	Norwood Hospital	1
Emerson Hospital	2	Saints Memorial Medical Center	3
Falmouth Hospital	3	Shriners Burns Hospital	88
Franklin Medical Center	1	South Shore Hospital	5
Good Samaritan Medical Center	5	St. Elizabeth's Medical Center	1
Hale Hospital	5	St. Luke's Hospital	16
Harrington Memorial Hospital	1	UMass Medical Center Worcester	7
Henry Heywood Hospital	1	Unknown	4
Holy Family Hospital	106	Wing Memorial Hospital	4
Holyoke Hospital	2		
Hubbard Hospital	1		
Lawrence General Hospital	51		
Leominster Hospital	4		
Lowell General Hospital	6		
Malden Hospital	2		

Burn Injuries by Victim's Community

County # of Burns

Barnstable 14

Bourne	1
Centerville	1
Chatham	2
Cotuit	1
Falmouth	1
Hyannis	3
Mashpee	3
Orleans	2

Berkshire 5

Pittsfield	3
Williamstown	1
Windsor	1

Bristol 20

Acushnet	1
Dartmouth	2
Fall River	4
Freetown	1
New Bedford	10
Swansea	1
Westport	1

Dukes 1

Oak Bluffs	1
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Essex 139

Andover	4
Beverly	2
Danvers	1
Essex	1
Gloucester	1
Hamilton	1
Haverhill	17
Lawrence	48
Lynn	5
Merrimac	1
Methuen	47
Middleton	2
Newburyport	1
North Andover	6

County # of Burns

Essex (con't)

Peabody	1
Salisbury	1

Franklin 2

Orange	1
Turners Falls	1

Hampden 28

Brimfield	1
Chicopee	3
Holyoke	4
Ludlow	1
Palmer	3
Springfield	15
West Springfield	1

Hampshire 3

Northampton	1
South Hadley	1
Ware	1

Middlesex 55

Acton	1
Arlington	1
Ashland	1
Cambridge	2
Dracut	1
Everett	2
Framingham	1
Holliston	1
Lexington	1
Lowell	15
Malden	3
Medford	3
Melrose	2
Newton	2
Somerville	7
Stoneham	1
Townsend	1
Tyngsborough	1
Watertown	3
Westford	2

County	# of Burns
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Middlesex	(con't)
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Wilmington	1
Woburn	3

Nantucket	1
Nantucket	1

Norfolk	15
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Bellingham	1
Brookline	1
Dedham	3
Franklin	1
Holbrook	1
Medfield	1
Quincy	2
Randolph	1
Walpole	1
Wellesley	2
Weymouth	1

Plymouth	19
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Bridgewater	2
Brockton	4
Carver	1
Duxbury	1
Hingham	1
Hull	1
Kingston	1
Mattapoisett	1
Middleborough	1
Norwell	2
Pembroke	1
Plymouth	1
Rockland	1
Wareham	1

County	# of Burns
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Suffolk	32
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Boston	23
Chelsea	5

Worcester	21
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Athol	2
Clinton	1
Fitchburg	2
Gardner	1
Leicester	1
Leominster	1
Lunenburg	1
Northbridge	1
Oxford	1
Southbridge	1
Spencer	1
Templeton	1
Uxbridge	1
Worcester	6

Causes of Work-Related Burns

Cause	# of Burns	% of Total	Cause	# of Burns	% of Total
Scalds	14	28%	Flame	6	12%
Cooking Grease	5	10%	Gasoline	2	4%
Cooking	3	6%	Welding	2	4%
Steam	2	4%	Barbecue	1	2%
Tap Water	2	4%	Clothing	1	2%
Beverages	1	2%			
Melted	1	2%	Contact	4	8%
			Appliance	1	2%
Other	14	28%	Machine	1	2%
Chemical	13	26%	Portable Heater	1	2%
Flashburn	1	2%	Unspecified	1	2%
Electrical	8	16%	Explosion	2	4%
Electrocution	5	10%	Ignitable Liquid	1	2%
Unspecified	2	4%	Natural Gas	1	2%
Flashburn	1	2%			
			Fire	1	2%
			Airplane Crash	1	2%
			Not Reported	1	2%